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ADDRESS.

CHAIRMAN'S ADDRESS.

Delivered in the Section on Dental and Oral Surgery, at the Forty-sixth Annual Meeting of the American Medical Association, at Baltimore, Md., May 7-10, 1895.

BY M. H. FLETCHER, M.D., D.D.S.
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I acknowledge with pleasure the courtesy shown me, in again selecting me as presiding officer; though this Section is not large as a national body, the quality of its work is second to none, and its influences are unbounded. Its tendency is to elevate to a higher standard thereby advancing the science of the profession. In looking back over the past twelve months, these marks of progress are encouragingly conspicuous and, we believe, point to a steady and healthy growth. This is indicated by the increased number of practical scientific workers who are coming forward; by books of scientific value second to none in their line; by numbers of good papers and discussions on important topics, many of which have served largely to add to our fund of knowledge. Errors have been eliminated which is equally important with new discoveries. Superstition and guessing are giving place to accuracy and precision.

It is a fact that all the professions which have man himself for their subject, which aim to rectify his physical deficiencies, are to-day, and always have been, of the greatest interest; their scientific advancements in the past decade are more marked than in any previous one, but our *lack* of knowledge is still very great. Through the kindness of nature in maintaining her laws regardless of all theories and methods, our patients recover and are even grateful, believing the result to be in exact accord with the laws which we are supposed to understand; but though we may have been both honest and conscientious in our work, does this lessen our responsibility? In other words should we not, and can we not, know better than we do? And do we take all means accessible to inform ourselves?

When we work or reason from wrong principles, nature keeps coming back at us with the same conditions and by continuous knocking at our obtuseness, tries to shows us the right way; and when at last we perceive and accept her teachings, we become through our enlightenment, the true benefactors of mankind, and I take it that there is no nobler nor happier position in which a man may find himself. Now in order that we may attain this desirable position, our minds must be constantly on the alert, willing to correct errors, and sensitive to new truths, much as the photographer's plate is sensitive to light and shadow. This might seem a dry and monotonous pass-time, but those who have tried it longest, have gained the most pleasure from life, and have been of greatest usefulness. Lubbock says, "Those who have not tried for themselves, can hardly imagine how much science adds to the interest and variety of life." This kind of life and work gives us all the poetry we may desire with a limitless field for imagination; it gives us art, for nature is art; it gives us history, for facts about people and nations is history; it gives us science, for knowledge of the laws of the universe is science. Nor is this the limit, for after all our seeking there yet remain truths that are beyond the mind of man to conceive.

I am aware that when I touch upon the best methods of educating students for our profession, I run the risk of being prosy and tiresome; but the subject bears so directly on our standing in the future, that I presume upon your courtesy to the chair, and take advantage of my opportunity. Discussion of this point has not been confined to our specialty alone. Educators in almost every line have been much agitated over the same problem. I am persuaded from what I have read and observed on this topic, that a good way to try to solve the question is through the study of mental philosophy, the laws of which within certain limits are as unchangeable as those pertaining to the physical man. Now if we take into consideration, the fact that it is through sense perception that we receive all our knowledge, would it not seem that the technique classes or laboratory methods would be the most natural channel through which to educate not only our students, but those in all branches of medicine. Recall for instance the delicate technique required of the successful surgeon, the oculist, the throat specialist or gynecologist; even the general practitioner needs a gentle and educated touch, and a most thoroughly trained mind in reasoning from cause to effect, and effect to cause. Good and accurate results come only to him who has learned how to reason after this manner, first on the simplest matters in philosophy; then gradually going on step by step, until he is able to handle in a practical way the more obtruse problems. This training begins in babyhood, from the time the infant first notices the candle light, and by experiment learns that if he touches it, he suffers pain. Thus he accumulates one fact after another, until he finally reaches the last stages of mental development, that of judgment and ideation. In connection with this subject of mental ripening, comes the question, which has been somewhat discussed, as to whether a student showing no adaptibility in learning the branches he has chosen, should be allowed to continue at such work; or whether he should be shown his defects, and encouraged to try some branch of work for which he may have capabilities. Pertinent to this point, there is in the February number of *The Educational Review*, an article on "The Education of the Nervous System" by Henry H. Donaldson, in which he says, "No amount of education will cause enlargement or organization where the rough materials, the cells are

wanting; and on the other hand where these materials are present, they will in some degree become evident, whether purposely educated or not;" he further says, "on neurologic grounds, therefore, nurture is to be considered of much less importance than nature, and in that sense the capacities that we most admire in persons worthy of remark, are certainly born rather than made."

Again he says, in speaking of early mental ripening or precocity, "The same conditions which give the individual a generously planned nervous system also favor its early development." In such precocious persons it tends to grow for a longer period than usual, a feature which is fully as important as the precocity itself. It is extremely interesting to see how, among a series of eminent men, excluding men of action, the determination of distinction follows the order in which the brain normally attains the high development necessary to command recognition in a particular profession. He gives the following table based on 287 cases analyzed by Prof. James Sully.

287 Cases analyzed by Professor Sully.	Gave Promise Before 20 Years Old.	Produced Before 30 Years Old.	Attained Distinction Before 40 Years Old.
Musicians	95 per cent.	100 per cent.	100 per cent.
Artists	89 per cent.	98 per cent.	100 per cent.
Scholars	83 per cent.	71 per cent.	90 per cent.
Poets	75 per cent.	92 per cent.	92 per cent.
Scientists	75 per cent.	80 per cent.	92 per cent.
Novelists	75 per cent.	56 per cent.	80 per cent.
Philosophers	67 per cent.	56 per cent.	60 per cent.

"Those professions demanding only small acquisition but a very perfect adjustment between one sense organ and one set of muscles, as between the hand and the ear in the musician, and the eye and the hand in the artist, are precocious throughout, while the philosophers with their need for accumulated information and ripened judgment bring up the the rear. Similar investigations on slightly different material yield accordant results."

The art of our profession would naturally compare with the artist in the table, for success in this department is dependent upon the training and skill of the eye and the hand; again, the science of the profession compares with the scientists in the table, who come much lower in the list, showing the necessity for more strength of mind, and a greater accumulation of facts. But to be simply an artisan and a scientist, is not sufficient to enable one to reach the highest standard of usefulness as a practitioner of medicine or its specialties. In our own division one needs to be somewhat proficient in at least four callings, namely: As an artist, a scholar, a scientist and a philosopher. If one of fair ability honestly endeavors to meet the demands of his profession in these four callings, all things desirable will be at his command.

It must be evident that it matters not whether a student be dull or precocious, the amount of his knowledge is proportional to his accumulation of facts and his ability to recall and utilize them. Different men have different abilities. Some persons do with great ease or almost intuitively those things that are only done with the greatest effort by others if they succeed at all. This being the case, the standard of license to practice any department of medicine should be so guarded that no incompetent person could enter its ranks. As to the best methods of educating for this standard, the most natural, as before stated, is that method in which the senses convey knowledge by contact with the objects and phenomena in actual work, at first in its simplest form, then gradually leading step by step to perfection; by this method the mind is stored with facts and trained to reason, and use them to the end desired.

The "technic system" of teaching was very ably presented last May by Dr. Edward C. Kirk, before the Academy of Dental Science of Boston and well discussed by its members; and I wish to say that I heartily agree with the essayist. There is, however, one feature of education in both dental and medical colleges, which was only touched upon in the paper and mentioned by no one during its discussion, yet I consider it a question of the greatest importance. It is that of having suitably trained instructors in our colleges. This I deem to be as great a defect as any at the present time in our system of teaching.

At the last meeting of the American Dental Association during the discussion of the report of the committee on dental education, Dr. H. J. McKellops struck the key note when he said, "Give me the man who can teach science." If a student is bright and apt in his college work he will make good progress under almost any circumstances, but if he makes good progress with poor instruction, how much better would he do under thoroughly trained teachers. It has been my pleasure to be a student, under instruction, in some branch almost continuously for the past eighteen years, and this feature of ability, or lack of it, to impart knowledge is a point that has impressed me very strongly, with every change of subject and instructor. It is not every one that has knowledge who knows how to impart it intelligently, and the fewer number know how to present a subject in a form most suited to the mental status of their hearers. If the capabilities of all students were equal, and their interest in progress were the same, the matter would not present so many difficulties to the instructor, but were these conditions possible, the same class would progress much more rapidly under one teacher than under another. An article in a recent magazine by a college student compares two professors in the following manner: "Though he thoroughly knows his subject, his instruction is about as clear as mud; with him everything is 'perfectly obvious,' but to us his attempts at exposition are positively confusing; he thinks only of his subject, never of his students; he is cold, unsympathetic, unapproachable. I want to know the nature of this requirement for to-morrow, but if I ask him he will either show impatience at my ignorance or temerity, or misconstrue the motive of my inquiry and stand upon his pedestal of superior knowledge. But with Professor X. we make headway; he seems anxious and able to make every thing clear; he puts himself in his pupil's place; he is always willing to remain after the lecture to answer questions or discuss debatable points."

Charles C. Ramsay, in the January number of the *Educational Review*, speaks of this subject as follows: "True teaching, whether in school or college, is the process of causing another to know through self-activity, and includes the mutual effort of two persons to the same end, the teacher and the learner. Until the two are at this common work the process of teaching has not been begun; until the learner has learned the teacher has not taught." And let it be remembered that the proof of the teaching process always rests with the learner, not with the teacher, whether the scholars be young or old. "The teacher

can prove that he tried to teach; the scholar alone can show that the teacher succeeded." "The measure of information," said Pestalozzi, "is not what the teacher can give, but what the pupil can receive." These fundamental principles of all good teaching are as applicable to collegiate as to elementary and secondary instruction.

Now, if this be the case in literary institutions and universities, where the professors and teachers give their entire time to this work, and should know how to do it in the best possible manner, how much more is it true in dental and medical colleges, where the teaching is done by men whose time is almost wholly taken up with a busy practice; many of them are eminent and skilled in their professional duties, yet are quite marked for their lack of ability to teach; nevertheless, their students are expected to reach a high standard under their tutorage. Is it any wonder then that students pony, and resort to all kinds of methods for getting assistance at examinations, under such conditions?

The subject as to whether the lecture method or that of recitation is best, has been pretty fully discussed amongst our educators, but whichever method is adopted it in no way makes a good or bad teacher. Now, if one needs so much training in order to properly fill a simple cavity or extract a tooth, a procedure which seems so simple to us, how much greater his obligation to be properly prepared before attempting to direct and instruct the intellect of others. The loss of teeth or a limb may be replaced by artificial substitutes, but the loss of time can never be replaced; and time to many students is as valuable as to the professor; probably not from an immediate financial standpoint, but the loss of time to an earnest, intelligent student at an age when he is studying a profession is not a trivial matter. You may say that many students or even most of them care but little for their time, or what they learn, so they are graduated and given a license to practice; granting this to be true, it is all the greater reflection upon their instructors for if the work was made more interesting the number of attentive students would increase proportionally and develop into the kind of practitioner we delight to recognize; it is a known fact that it is not always the pupils who stand highest in a class that show the best results in after life; the plodding, honest ones in almost every class many times outnumber the precocious ones; and under the guidance of properly trained and intelligent instructors, the number of honest plodders might be increased from the ranks of those who are apparently dull and careless, and the list of precocious might be enlarged from those who are brilliant and capable, but who fritter away their time in gaity and foolishness. It is not an uncommon thing to find in a class students who outrank many of their professors in strength of intellect and natural ability; not only these, but all students have a right to demand that their instruction be presented to them in the best possible manner.

It is a perfectly easy matter to get professors for the asking, but trained instructors are rare; and even those who have the natural qualities to become good instructors are not numerous. No one doubts that we have professors in almost every college who are thoroughly capable, and who take time and pains to be what they should to the student, but on the other and, a greater number fall far short of this standard.

I believe a majority of students in all colleges are industrious, and of good intent, and many of them are barely able financially to carry through a three or four years' course; such students, if denied the full measure of their capacities to receive, are defrauded of both money and time, the first of which never is, and the last never can be repaid. There are no normal schools, so far as I know, for the proper training of dental and medical teachers, and if there were, it does not seem practicable for many of our eminent practitioners, who are in other respects most suited for the position of instructors, to leave work and go to other localities for such training; but such a normal school, it seems to me, is demanded in some suitable form, and it would seem a most fitting topic for discussion and action by our national associations of faculties. The distance a missile flies and the velocity with which it goes, is exactly proportional to the force which impels it. The analogy holds good in our colleges, for students of high grade can not be graduated unless the force can be found in their Alma Mater to produce the desired result; consequently, it would seem no more necessary, if as much, to lengthen the term at college, increase the curriculum, and raise the standard of entrance, than it is to increase the quality and ability of college instructors.

ORIGINAL ARTICLES.

ELECTRICITY.

Read in the Section on Physiology and Dietetics, at the Forty-sixth Annual Meeting of the American Medical Association, at Baltimore, Md., May 7-10, 1895.

BY E. H. WOOLSEY, M.D.

CHAIRMAN OF SECTION.

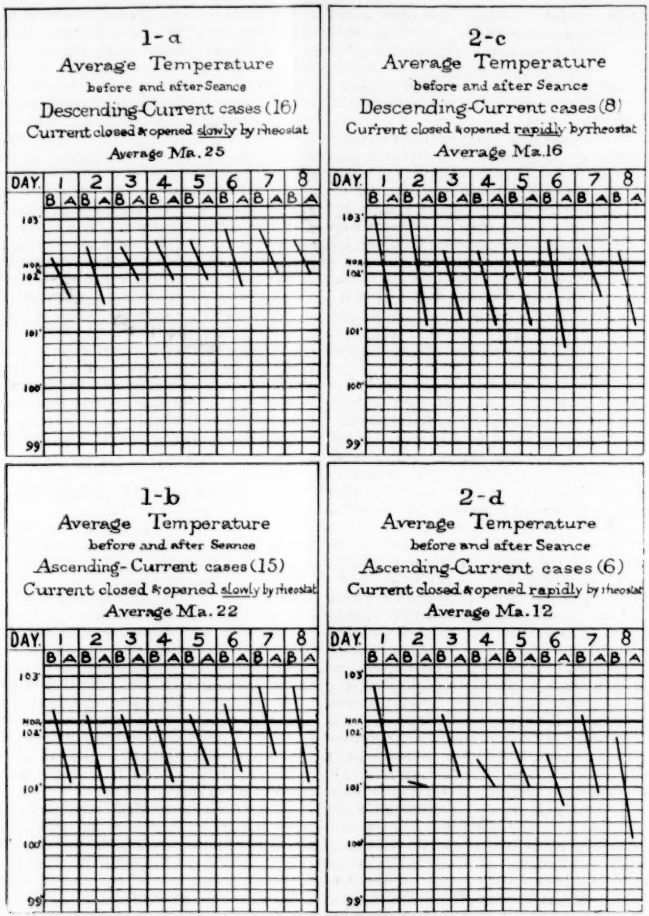
OAKLAND, CAL.

Last year I presented to this section a tabulated statement of observations made upon rabbits treated by electricity. This experimental work has been continued along nearly the same lines as heretofore, and some additional effects of electricity not previously anticipated have been noted. The observations on the last series of sixteen cases treated, however, have not been tabulated, for I intend to pursue this work further and ultimately to arrange a complete summary of all observations.

In addition to what I have previously said as to polar influence on the spinal cord, lungs, bladder, etc., I have now to announce that with the electrodes placed as I have always used them in the so-called descending and ascending current cases, all of the abdominal viscera are usually affected differently by a different direction of current. The strength of the current used in the last series of experiments varied in different cases from 5 to 20 ma., and in different sets of cases was delivered differently, and yet it was almost uniformly found that the kidneys were congested and the mucous coat of the stomach moist and the contents of the stomach moist in the descending-current cases, and that exactly reversed conditions obtained in the ascending-current cases.

The only line of observations I have worked out to a finish is that on the influence of electricity upon temperature, and I herewith present a series of temperature charts with explanations.

I may here remark that, notwithstanding all statements to the contrary, the immediate effect of galvanism, however administered, is to lower the vital temperature, that this is followed by a reaction which reaches somewhat higher than normal, and this by a



GRAPHIC CHARTS.

Illustrating the Influence of Galvanism on Vital Temperature—Experimentation on Adult Domestic Rabbits.

Readings of charts 1-a to 7 inclusive show temperature observations before and after séance daily for a period of eight days, and of chart 8 at the several times indicated during a period of eight hours following séance.

Séance ten minutes. Milliamperage always the same in each case, but in different cases varied from 5 to 80. Temperature taken carefully by Hicks' thermometer in rectum.

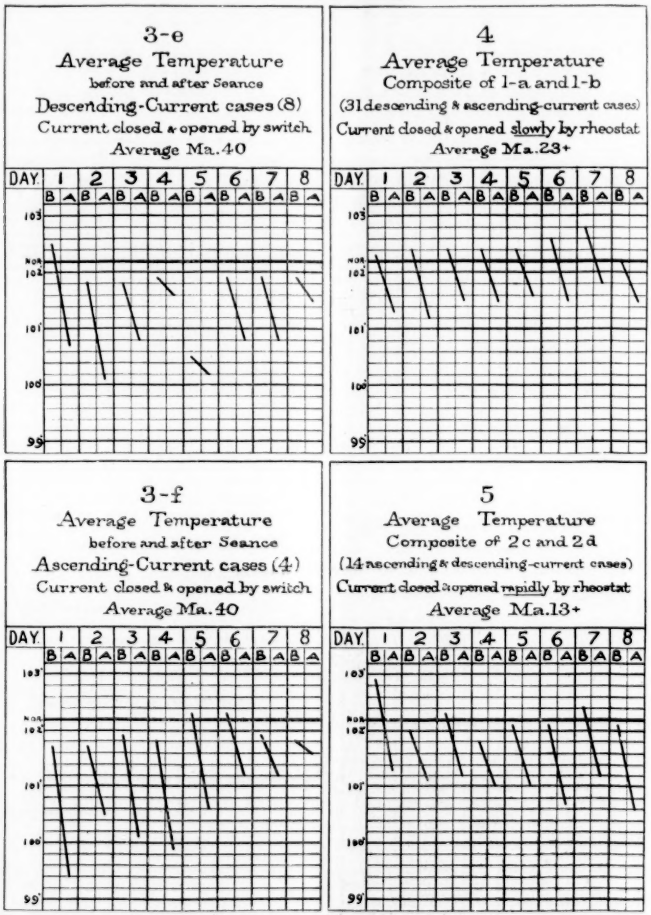
(Normal temperature of rabbits 102.2°, previously determined by taking average of first observations, in the first thirty-one healthy rabbits experimented upon.)

Used stationary gravity battery, Weston's milliampèremeter, Massey's current controller, copper electrodes, $\frac{3}{4}$ x $1\frac{1}{4}$ inch, covered by lint wet in salt solution and fixed by body straps over shaved skin at cervico-dorsal and lower lumbar regions of spine.

second reaction which reaches yet higher, and which is succeeded by a fall to near the normal; moreover, that after several days' treatment with strong currents, however delivered, there is a feverish reaction. In general terms it may be said that the stronger the current and the greater the shock in its delivery, the greater will be the fall and the more pronounced the reaction.

I will present to you a few cases which I have selected from my records which will show the range of usefulness of galvanism and incidentally illustrate my methods.

Case 1.—Locomotor Ataxia. J. H., 42; locomotive engineer; admitted to my private hospital in 1884 with locomotor ataxia; could scarcely walk with eyes open and could neither stand nor sit steadily with eyes closed; no response of reflexes; perfect anesthesia below the knees; mind occupied constantly with

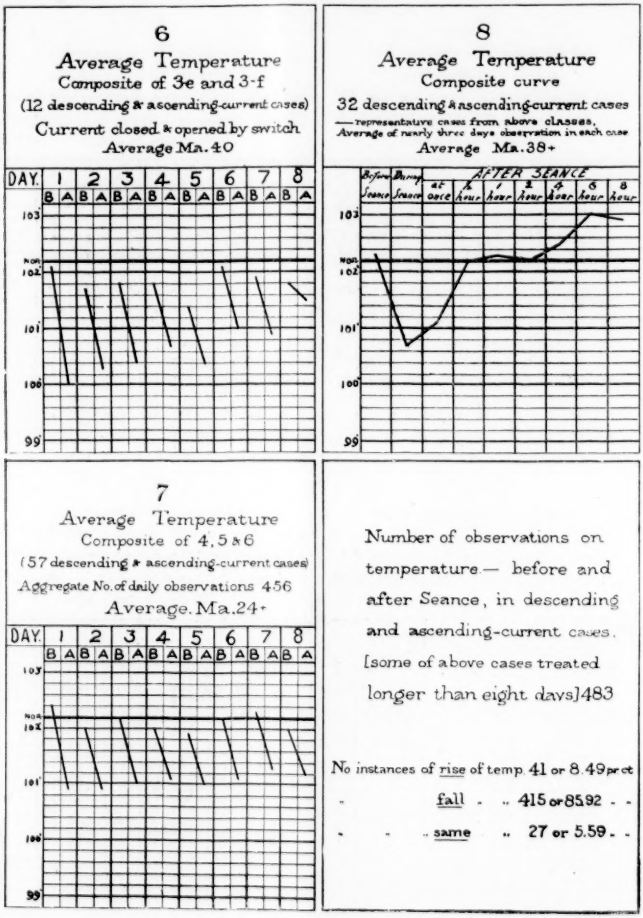


delusions, recognizing members of his family as embodiments of stranger spirits. At end of three months' treatment, consisting chiefly of galvanism, he had some knee-jerk and some sensation of legs and feet and his mind, though occupied by some harmless spiritual delusions, was practically restored to usefulness, and he was discharged for duty, but not to resume his former occupation. He, however, was considered well enough to return to his engine and did so, working for six months, when one day impelled by a spirit to run down a tramp on a trestle, killed him.

He was re-admitted to hospital in about the same condition as upon first admission, though his mind was even more perturbed. He was treated again in the same way as before for two months, and was again discharged as able to work and as fully recovered as at time of previous discharge. Since then he has worked steadily as a machinist. I saw him a few weeks ago and he has again lost the knee-jerk: has lately suffered from numbness of the feet; his mind is slightly perturbed, and he has become somewhat deaf, but is still able to do good work.

In this case I used a mild, stabile, galvanic current; one electrode at feet, the other—three inches wide by one foot long—over upper part of spine; séance ten minutes daily; direction of current chiefly upward, though reversed to downward direction once or twice during séance, yet always finishing with the ascending current.

Remarks.—This is my usual treatment in cases of this class, modified more or less as to the number of reversals; frequently reversing about every two minutes, but finishing usually with the ascending current; also occasionally modified by labile treatment of the spine and incidentally to other parts of the back, pausing for an instant, especially when handling the positive electrode, at tender or painful points. Occasionally the forgoing practice is modified by placing the upper electrode in the patient's hands. This I believe to be good practice, for in such cases the functions of the upper extremities as well as of the lower are frequently at fault, and



stabile electricity at hands and feet meet special indications here, besides conditioning such extensive diffusion of the current through the body as to meet most other indications, though the direct application over the spine and particularly over affected areas may be of great utility. In the matter of reversal of current, it is in most cases better to remove one of the electrodes before using the pole-changer for the shock will be very much less; and for the same reason it is even better to gradually withdraw the current by a rheostat before reversing, and then after the change, to slowly turn the current on again.

In regard to current strength my experience is in accord with the growing tendency of electricians to use weaker currents. The terms mild or weak, medium and strong, are only relative, and significant only of the individual views of different writers, one for example, considering 15 to 20 ma. as mild and 100 ma. as not over strong; another, 10 ma., 20 ma. and 50 ma. as respectively mild, medium and strong; while others with whom I concur, consider that the range of therapeutic currents should be placed very much lower. In spinal cases I commonly use a current of from 5 to 10 ma., though in some cases as low as 3 ma. and in others as high as 30 ma. No definite rule as to strength of current can be laid down for the treatment of this class of cases. However, it may be said in a general way and fairly applicable to all classes of cases, that the current which will usually be most useful is that which the patient can just barely feel. By this rule, however, the milliamperage will vary considerably in different cases on account of individual peculiarities due to the influence of idiosyncracy or disease. More voltage will

be required if the circuit resistance is increased; if, for example, the patient's skin is dry, or the sponge or other covering of electrodes is imperfectly moistened, or the conducting wires or terminals are rusty; yet, with all such impediments, provided a current of desired strength can be steadily maintained, the treatment may be perfect. Of late there has been much discussion as to the quality of surface electrodes, and I consider that the medical electrician should aim to secure as perfect conductivity as possible; practically that he should not lose sight of the fact that clean metallic connections and perfect moisture of electrodes are useful, and that the conductivity of water is increased by warmth and also by the addition of salt; but it must nevertheless appear that even poor conductivity may exist, and yet, as long as it permits of a steady flow of current, and the voltage can be depended upon to yield a current of sufficient strength to meet the requirements of a case, that there may be no fault of treatment. Whatever resistance may be encountered a perfect milliampèremeter will show the current delivered, and I may here add that a perfect milliampèremeter is indispensable.

Ten minutes has been given as the usual length of séance. It is necessary to consider the quantity of electricity administered, and until we have a more practical means of measuring coulombs we must consider time as an essential factor, and it is therefore necessary to fix arbitrarily a limit to the length of séance. This question is occupying much attention at the present time, and the tendency now is to diminish the dosage of electricity, not only by giving a weaker current, but by shortening the séance.

Experimentation on rabbits has convinced me that the length of séance has a most material influence, for I have observed under uniform conditions that the effect of electricity upon nutrition of internal organs is more pronounced when a current of 10 ma. is given fifteen minutes than when it is given ten minutes; and that a current of 5 ma. given fifteen minutes will produce effects similar to the effects of a current of 15 ma. given five minutes.

At the beginning of treatment daily séances are usually in order that obtained effects shall be maintained, and even two short séances a day may in some cases be useful; but generally speaking, after a patient has begun to show marked signs of improvement, which usually appear when the current is well adapted—in from one to two weeks—then the course of treatment should be broken by giving only four or five séances a week; and as the case progresses the treatment should be less and less frequent; and it may here be remarked, that for similar reasons it is also necessary, when a patient begins to show marked signs of improvement, to diminish either the strength of current or the length of séance or both. My reason for these remarks on interruption of treatment, etc., is that patients, and animals as well, usually show under the influence of daily treatment an increasing susceptibility to electricity, and in the course of a week or two usually exhibit some irritability of temper and, as before stated, especially when giving strong currents, a reactionary rise of temperature; and also exhibit other evidences of being overcharged or overtreated—evidences that electricity is cumulative, or that its effects are so.

One of the first signs of improvement in cases of chronic disease of the spinal cord treated by electricity is the rise of the patient's temperature. It may not be generally known that the temperature of such patients is almost invariably subnormal and frequently very low; but this is nevertheless a fact which I have determined by a long experience, and a fact which I have come to regard as of great diagnostic value.

This curative rise of subnormal temperature should not be confounded with the reactionary rise of temperature occurring in other classes of cases, and referred to as a result of protracted treatment; nor is there any conflict here with the fact, illustrated by the temperature charts, that the immediate effect of electricity is to cause a temporary fall of temperature.

In an analysis of the tabulated effects of electricity upon rabbits presented to this Section last year I drew the conclusion that "in a downward current the ultimate anodal influence is to cause anemia, and in an upward current the ultimate cathodal influence is to cause hyperemia;" and I am still impressed with this view.

From my earliest successful use of the constant current, I have entertained the opinion that current direction and polar influence were the most important factors connected with its administration. The presumed effect upon the blood vessels by the influence of the positive pole upon the vaso-constrictors and of the negative pole upon the vaso-dilators always seemed to me an easy explanation of the phenomena observed in practice; and my further experience and experimentation strengthen this view.

The catalytic action of electricity no doubt plays an important rôle here, and I am prone to believe that the *modus operandi* of such action most necessary to nutrition is, as Goelet has pointed out, the influence of electricity upon oxygen within the body in changing it into ozone. Erb says that catalytic action is independent of direction of current and yet, while considering chronic forms of disease of the spinal cord he says, "this action alone explains the rationale of cure of such diseases."

REPORT OF CASES CONTINUED.

Case 2.—Tetanus. In 1884, M. L., 40; butcher; admitted to hospital with tetanus, caused by a superficial scalp wound which was foul, but readily healed under antiseptic treatment. The opisthotonos was extreme, the trismus was complete, and his efforts at inspiration were distressing and accompanied by a shriek. The battery I used then was a stationary, gravity, 50-cell battery; but at that time the current was delivered by a switch without the use of rheostat or milliampèremeter. I applied a stabile descending current, the anode at the entire spine, supported by a pillow as his body was arched forward, and the cathode at the feet, and turned on the full force of the battery, the latter being in an active condition. This current was maintained for six hours without sensible improvement; was then suspended for an hour, and then reapplied and continued for the night, and on the following morning the patient was better—respiration less shallow, expiration less noisy. There was less trismus but mouth could not be opened. The current was withdrawn, but after an hour the convulsions were violent. The current was again applied as before and in less than an hour the symptoms abated slightly, and the current was again withdrawn. In a few minutes severe spasm and rigid opisthotonos again returned, but the application of the current caused some apparent relief in the course of a half hour. It now became evident that we had the case aunder some control, and the electrodes were left in place (except as they were removed for purpose of moistening); and when the symptoms were aggravated the current was turned on, and when they abated it was turned off; as yet, however, the patient could not move a muscle of his body.

On the third day, when under the influence of the current, his mouth could be forcibly opened a little, and for the first time he swallowed a little water—teaspoonful at a time—but did this with great difficulty; but even now when the current

was withdrawn for an hour or so, spasms returned and instantly held him so rigidly that no external muscle could have been forcibly relaxed without rupture. (About this time an attempt of a new heroic nurse to bend him resulted in the breaking of the foot of the bedstead.) Gradually the current acted more promptly and had a more relaxing effect and the recurrence of spasms became less frequent. In the course of a week the spasms yielded within a minute after turning on the current, and during intervals of repose patient was fairly comfortable and could take liquid nourishment, but he was too sore to move, as the muscles, abdominal and thoracic, as well as those of extremities, seemed to have been nearly torn from their attachments by the violence and persistence of the spasms.

About this time, on an occasion of recurrence of spasms I administered the current experimentally in an upward direction, but instead of controlling the spasm it increased its severity, and upon reversing the current to a downward direction the spasm was again abated. From this time on the current was gradually reduced and the time of its administration diminished. At the end of three weeks' treatment the patient was discharged recovered, though his muscles were yet so sore and stiff from previous tension that upon rising from his bed or chair he could scarcely move for some minutes, and he could not turn his head, but the stiffness gradually disappeared, and he is still alive and well.

Remarks.—In this connection it may be of some interest to state that when a current of extraordinary strength, 70 to 100 ma., is delivered to a rabbit in the descending direction, the spine will be arched forward and the head and tail drawn up; and when delivered in the ascending direction, the spine will be arched backward and the head drawn somewhat downward and close to the trunk, and the tail drawn downward and forward; and moreover, that such contortions will follow such current direction however frequently the current is reversed; and moreover, that rabbits thus severely shocked by such reversals of such current, are likely to die in the course of a few hours with convulsions of a tetanic character.

Case 3.—Locomotor Ataxia, from Diphtheria. In 1886, I treated the six-year-old son of S. G. for locomotor ataxia, resulting from a protracted, severe attack of diphtheria. He could not walk even with his eyes open without falling, and had returned to creeping. The reflexes at soles and knees were entirely abolished, and he had aphonia. I called in consultation the ablest neurologist on the Pacific Coast, who agreed with me as to the probable utility of electricity, but he advised the faradic current to be applied to the neck and the galvanic current to the spine, and expressed the opinion that direction of the current was immaterial. The patient's temperature was 96.5. I commenced the treatment as suggested, giving daily seances—applied the faradic current to the neck, about as strong as the patient could bear for five minutes, and with electrodes at the feet and spine gave a stabile, downward, galvanic current of 10 ma., delivered by switch, for ten minutes. This treatment was continuad for a week, when patient had not only not improved but was rather worse in every respect. I then discontinued the faradic current and applied the galvanic current in an upward direction, but in other respects precisely as before—same strength of current, same time, etc. At the end of the second week there was some improvement; the voice had increased from a low to a husky whisper, and patient could stand a little longer on his feet; his temperature has risen to 97.3—nearly a degree, but there was not the slightest response of reflex tendons. This treatment, namely, the ascending current was continued, though the strength of current was lowered to 6 ma., and the length of seance reduced to eight minutes. At the end of the fourth week the patient was nearly well, though the knee-jerk was still only just perceptible. The temperature had become normal; the voice had returned, though was yet somewhat weak; and he could walk about for a half hour without assistance. Treatment was continued, though only three times a week, for another month, when patient had fully recovered in every respect. He is now alive and well.

Case 4.—Locomotor Ataxia, from Tobacco. In 1886, J. F., 38; laborer; admitted to hospital on account of locomotor ataxia. He could not stand or even sit erect with his eyes closed, and staggered like one intoxicated when walking with eyes open. Patellar reflexes absent and no response at soles; skin generally more or less anesthetic—did not feel ordinary pin pricking even at arms or neck or face, nor deep pin pricking at lower extremities; mind not impaired, but speech sluggish. Cause of ataxia seemed to be from excessive use of tobacco. Gave stabile current of 20 ma., delivered by switch to foot and spine electrodes, ten minutes daily; and for three consecutive days, experimentally in a descending direction, with the effect of aggravating the symptoms. Then I administered the same current in an ascending direction and the patient at once—during and immediately after the seance, expressed himself as feeling better and his voice was stronger and he looked brighter. This treatment was persisted in daily except Sundays, and there was daily improvement; sensation and activity of reflexes gradually returned and the ataxia gradually disappeared and he was discharged fully recovered at the end of three weeks' treatment, and has since remained well.

Case 5.—Spinal Meningitis, from Concussion. In 1886, J. L. P., 30, brakeman, admitted to hospital on account of concussion of spine from railway collision. After five weeks' general treatment the acute distressing symptoms passed off but left an apparent congestion at the upper dorsal spine where, upon pressure, there was tenderness and pain, and after exercise severe intercostal pains. A current of 3 to 10 ma. was applied—positive electrode moved over tender part of spine and negative electrode fixed at buttocks. During the seance of ten minutes, finding that he could not at once stand 10 ma., a weak current was given, and after a minute or so he could tolerate it a little stronger, and before the close of the seance could stand 10 ma., providing the electrode over the spine was kept in motion. This treatment was repeated daily for six days when the sensitiveness on pressure and the exaggerated electro-sensibility had greatly diminished. Then, however, the house physician gave the current accidentally in an upward direction with the effect of waking up morbid sensibility of the spine and rendering the patient more nervous and irritable, and that night he was unusually restless. On the following day the regular treatment, descending current, was used, causing immediate relief of tenderness and nervousness and the patient slept for an hour immediately after the seance. This treatment was continued daily except Sundays for two weeks longer, when the patient was discharged. He worked as ticket collector for three years without interruption though suffering at times for a few hours, and occasionally at night, from pain at upper part of back. He was assigned to duty as brakeman and after a few days of such work was again admitted to hospital, in 1890, with acute, spinal meningitis. The dyspnea on account of intercostal neuralgia, etc., was distressing, and cyanosis was marked, and he complained of pain at the back, neck and head, and also at the extremities. He was kept constantly under the influence of morphia. His wife and brother-in-law—a physician, and the membership of the hospital staff expected his death daily. This was the condition in which I found him four weeks after his admission. At once I applied a stabile, downward current without disturbing him much in bed, anode about one foot long and three inches wide over the most sensitive part of the spine, the upper dorsal and lower cervical, and cathode at feet. I began with 5 ma. and increased to 12 ma. during a seance of ten minutes and the relief was almost instantaneous; and before the seance was over patient went to sleep. This treatment was given twice daily for several days and each time with the effect of causing sleep before the seance ended. The patient gradually improved and the number of seances was diminished, but the rather strong current was kept up as the patient always asked to have it stronger, and on some occasions, through the offices of an indiscreet fellow-patient, he got as high as 40 ma. and yet with apparent good effect. But after about two weaks' treatment patient began to complain of pain in the left leg and of abnormal sensations at the foot and of a drawing feeling at the toes. He had now so far recovered that all anodynes had been withdrawn; he was able to sit up in bed; soreness and pain at back and neck had largely abated and his appetite had returned. I continued the treatment daily, except using a weaker current 8 to 10 ma., for a month longer, always with agreeable immediate effects and the spinal tenderness had entirely disappeared; and there was but one complaint, that of pains at left leg and foot. He could walk about town and felt himself improving from day to day, but his face began to be a little edematous. The treatment was continued and there was no indication of return of spinal irritation; but each day there was some new phase of edema and soon it became quite general and very pronounced, the skin being distended to its utmost, and though patient could yet walk when raised up, he could not rise from his bed unassisted. The heart and urine were examined but no evidence of organic lesion was discovered. I now suspected that the current had caused it, and putting my theory to a

further test, gave an ascending current of the same strength—stabile, with anode at feet and cathode at lower part of back, keeping far below the site of original irritation. On some days of treatment a transitory irritating effect was occasioned at the meninges of the upper dorsal portion of the cord, but this was always promptly controlled by the temporary application here of the positive pole. After the first day's treatment with the ascending current, the edema began to subside, and during a ten days' course of such treatment entirely disappeared and with it the numbness of left leg; and the patient was discharged recovered. He went to work as flagman and continued at such work for several months, but then caught cold and died suddenly of pneumonia.

Case 6.—Cerebral Hyperemia, from Loss of Sleep. In 1888, Lieutenant L., 28, was admitted to hospital in consequence of having been on ship duty for five consecutive days and nights. He had paroxysms of cerebral hyperemia coming on suddenly several times a day, though there was some premonition such as vertigo and headache. When having such symptoms he could walk a short distance—a half block or so, with staggering gait, but then had to lie down or fall. Upon lying down or falling he would flex his body strongly, and become unconscious and the torpor would be so deep that he could not be waked; but in an hour or so would wake voluntarily and remember what had occurred up to the moment of such sleep. When these spells came on the face became flushed and during the period of unconsciousness cyanosed, but upon waking would resume its natural pale color. Under medication it was found that nothing would abort the paroxysms, but that a large dose of bromid of potassium or soda given promptly when the face began to flush, would render the paroxysm less severe, though the after effect seemed to be injurious, as it left him in a semi-torpid condition for some time after the ordinary duration of the spell. After several days' treatment, he happened one day, when a paroxysm was coming on, to be in the office where galvanism was accessible and I quickly applied a current of 5 ma. to head, moving the positive pole over the forehead and holding the negative pole steadily at back of neck and continued this treatment for five minutes. He experienced immediate relief; the flushing and headache disappeared and the paroxysm was averted. From this time on the same electrical treatment was given whenever he had any flushing of face or headache, and always with the same salutary effect. In the course of a few days, however, it was found that a seance of a minute was all that was required. After two weeks of such treatment the patient seemed perfectly well, but the momentary application of the current was made occasionally, when the patient felt the least anxiety about himself, for some two weeks longer, when he was discharged convalescent, but was advised not to do any mental work for a long period. He, however, soon after resumed his studies; visited Washington and was examined and promoted; and has since been well and in active service.

Case 7.—Cerebral Meningitis, Traumatic. In 1891, S. R., 32; brakeman; was admitted to hospital on account of chronic cerebral meningitis which had resulted from a lateral crush of head between cars three months before. He had been in another hospital during that period, and said that he had not had a half hour's continuous sleep during all that time, though had taken frequent and large doses of anodynes, etc. Along the sagittal suture and between it and the left parietal eminence there was so much hyperesthesia that the lightest touch of the finger caused intense pain. I treated him for a few days with various anodynes and had him watched closely, and it became evident that he could not be made to sleep longer than five or ten minutes at a time. I then had his head shaved, and tried galvanism, placing a large, light electrode over the sensitive part of head and an ordinary sponge electrode in left hand and turned on, by rheostat, a downard current of 2 ma. This was all he could stand, and at times during a seance of ten minutes, it became necessary to shift the head electrode. The current caused some immediate relief of pain and tenderness, and besides a feeling of numbness of left arm. The same treatment was repeated that day, with the same result, except that the relief of pain, etc., of head and the feeling of numbness of left arm lasted rather longer, about two hours, during which time he fell asleep in his chair—the first natural sleep after the accident. On the following day he could tolerate a little stronger current, 3 ma., though the current had to be temporarily reduced to 2 ma., during the seance, on account of severe burning sensation. The experience of relief of pain, and also the feeling of numbness again followed the treatment and lasted for a long time—three hours, and he again slept after the seance. Similar treatment was kept up daily and occasionally twice a day with similar effects. The only modification of application was the shifting, carefully, of the negative pole from one hand to the other during seance, and in this way numbness of the left arm was prevented. The patient steadily improved; the current was gradually increased in strenth; the hyperesthesia and pain became less and less, and the relief after seance gradually lasted longer, until in the course of a month he got sufficient sleep—three or four hours regularly after seance and some at night—without the use of any medicine. At the end of two months' treatment he was discharged cured and has worked steadily since.

Case 8.—Meniere's Disease. Last October Mrs. H., 26, married, and mother of two healthy children, and herself in apparent perfect health, consulted me about "ringing in ears and noises in head" particularly troublesome in the right ear, which had troubled her for two years, and which at times caused such confusion that hearing was difficult. She was examined by an aurist who expressed to me the opinion that the case was one of Meniere's disease. She had accidentally discovered that quinin would relieve her, but also, that when used daily for some time, it aggravated the trouble; so had come to use it only on occasions of social events. I gave her, with ordinary sponge electrodes, from ear to ear, a current of $\frac{1}{2}$ ma., delivered by rheostat, and reversed frequently during seance of five minutes, but reversed by changing the electrodes, as the shock of reversal by pole-changer caused pain. During the seance she expressed herself as somewhat relieved, and on the following day stated that the noises did not trouble her for two hours after seance. I administered the same treatment daily, except Sundays, for a month. The result of each treatment was nearly the same except that from day to day the subsidence of noises, etc., during seance was more and more complete and the after relief more and more prolonged. On two different occasions, however, I finished the seance with the positive electrode at the right ear, and upon her return after such treatment she complained that she had not received the usual benefit. On all other occasions I finished the seance with the negative pole at the right ear. At this time—after a month's treatment, she seemed quite well, except that after any unusual excitement there would be a temporary return of noises, etc. I now gave only three or four treatments a week until Christmas time, and for some weeks she had not had the slightest return of her trouble. I did not see her again until the middle of January of the present year, when she returned in almost the same condition as when I first saw her. I resumed the same treatment, with the same measure of improvement, and for a month she has had but two seances a week and has not had any return of noises, etc.

Case 9.—Abscess of Fallopian Tube. In December of last year Mrs. L., widow, 22, had her menses suppressed by cold and had pelvic cellulitis and evidences of the formation of abscess in the left Fallopian tube or ovary. After general treatment it was deemed proper by consultants to make a laparotomy, but she objected, and after washing out the uterus repeatedly with sublimate solution, though not finding any evidence of intra-uterine disease, the experience of Dr. Lapthorne Smith occurred to me, and I introduced a uterine electrode and carried its point to, and possibly engaged it within the left tube, connected it with the negative pole, placed the positive electrode in her hands and administered a current of 15 ma. carefully through a Massey rheostat for eight minutes. This caused considerable pain, and rather severe back pains followed the treatment and continued for about two hours when she suddenly got relief and this was accompanied by a profuse flow of pus from the uterus. From this moment she improved, and about the only other treatment given was a hot vaginal douche of 1 to 4,000 solution of sublimate, twice daily. The discharge of pus continued freely for about three days and then gradually diminished and in the course of three weeks ceased. She passed the time for her next period without menstruating, except to the extent of a mere show on one day, and then began to suffer pains and from abdominal tenderness; and it seemed that she was likely to have another attack of inflammation and suppuration. Feeling sure now that the trouble came from stricture of the left tube I repeated the electrical treatment, but only using a current of 10 ma. eight minutes. This was followed by backache and increased soreness about the left ovary, but during the night her courses came on freely and she afterward had no serious difficulty and has since menstruated regularly, and is now in perfect health.

Case 10.—Suppression of Menses. On March 11 of this year Miss B. B., 20, consulted me at my office. Her menses had ceased suddenly two years before and had not returned, but she had had instead about once a month, a slight, thin, leucorrheal discharge, preceded by such feeling sas she had previously experienced at time of natural menstruation. She was emaciated, weak and anemic, but had no evidence of lung disease. She had been treated by two gynecologists who had

dilated the uterine cervix and had gvien her emmenagogues and tonics. Upon examination I found such stenosis of the cervical canal that it was with extreme difficulty that I passed the smallest uterine sound. The uterus was normal as to length and position. I was unable to pass the smallest electrical sound, so again passed the small uterine sound through the canal and connected it with the negative cord, and placed the positive electrode in the patient's hands, and turned on a current of 15 ma., and a bloody froth—hydrogen gas mixed with a little blood—oozed out, as usual, from the os. I moved the sound backward and forward constantly, during a seance of ten minutes and at the close it passed easily. The current was turned on and off slowly, and the patient felt no shock but experienced a slight burning sensation at her hands and some slight abdominal pain, and at the close of the seance complained of backache. It was nearly time for her monthly leucorrheal period. A week later she called and informed me that two days after the treatment her courses came on freely and naturally, and that she felt much better. Three days prior to her April period I gave her another electrical treatment like the first, except that I used a larger sound, and except that the current used was much weaker, only 8 ma. eight minutes. A week later she called again and said her menses came on time quite naturally. The stenosis of the canal had evidently been permanently relieved; she had some color; had gained in weight; was stronger and felt quite well. She has since remained well.

Case 11.—Rheumatoid Arthritis. On March 20 of the present year I called on Mrs. L., 60, married, and mother of several married healthy children. Found her in a wheel-chair suffering from arthritis of the larger joints of the extremities; those of left side being most affected. She had been disabled for nearly two years and had not been able to walk a step, or lift an ordinary book, for over a year, and could not, on account of weakness of left knee, extend the left leg, nor on account of weakness of the wrists extend either hand. The muscles of the extremities were wasted and flabby, but her face had a good color; her mind was unimpaired and her appetite was good. She had been treated by several physicians, some of them eminent, and one had administered galvanism so strong as to be very painful, for a period of six months, but she had grown steadily worse. Beside such general treatment, similar to what she had previously received, I gave her galvanism daily for two weeks and since then have given her four treatments a week. The strength of the current has been uniformly 6 ma., as this is all she can comfortably bear. (In such cases, and in most cases I may say, I consider that a painful current is usually injurious.) The current has always been delivered with a rheostat; one electrode is placed at the feet; length of seance about ten minutes; during the first five minutes a hand electrode is moved over the spine with an ascending current for four minutes, and finishing with a descending current for one minute; then, during the last five minutes of the seance, the hand electrode is placed in the left hand with the right upon that, or both hands and wrists and occasionally both elbows as well are wrapped in a wet towel to which the hand electrode is applied, and for four minutes of this time the current is given in an upward direction and during the last minute in a downward direction.

This method fits my notion, and it fits the patient, for she is getting well. On one occasion I finished the seance with an upward current, and without the patient's knowledge; and that night she did not sleep and this was the only restless night she has had since I have attended her. The joints are gradually resuming their natural appearance and she is gaining strength and flesh. She can now extend the left leg and the right hand fully and the left hand nearly, and she can walk across the room several times unassisted, and can even walk down a few steps and seat herself in her carriage without assistance.

Case 12.—Disseminated Spinal Sclerosis. On March 26 of the present year, I was consulted at office by E. H. W., 54, farmer and miner. He had some symptoms of disseminated spinal sclerosis, though the sensory tract was principally affected, yet there was slight paresis of extensors of all the toes and paralysis of the great toes. The upper and lower extremities were about equally affected, though the affection was most marked on the left side. With eyes closed, he could barely distinguish a knife from a piece of money in the right hand; but not one piece of money from another. With the left hand he could not even detect the contact of a knife or a piece of money or feel a lighted match until the skin was severely burned. He had slight ataxia, but his patella reflexes were normal or slightly exaggerated. The first symptoms began last winter and consisted of pain, numbness and coldness of the extremities, difficulty of buttoning his clothes, liability of letting things fall from his hands, particularly from the left, frequent stumbling and frequent attacks of insomnia and somnambulism. These symptoms increased until his sufferings were severe, and though he could walk about he had become quite helpless and could neither dress nor feed himself. His appetite remained good and his general appearance was fairly natural, though he was losing flesh rapidly—his weight having fallen in four months from 210 to 140 pounds.

Prior to this attack, his general health had been good, except that some three years ago he was troubled with dyspnea caused by aortic insufficiency, for which I prescribed iodid of potassium. In the course of a few months the cardiac murmur and the dyspnea nearly disappeared.

I now prescribed small doses of strychnia before meals, and small doses of codia for pain and restlessness; and administered a stabile, galvanic current to hands and feet—10 ma. ten minutes daily, for a week, and since then three times a week. At each seance he was given ascending and descending currents, beginning with a downward current, reversing to upward, reversing to downward, reversing to upward, and reversing to downward. On two occasions, once experimentally and once by accident, the seance was finished with an upward current, and on the succeeding nights he was unusually nervous and restless. On every other occasion of treatment the seance was concluded, as indicated, with a descending current. The patient has steadily improved. There is now but little difference in the functions of the two hands, and with either he can detect by feeling different pieces of money, and can definitely locate a touch at any part of either foot, while formerly he could not detect a similar touch at either foot, and at dorsum of left foot could not even locate a pin prick. He rarely suffers now from pain or coldness, and has no abnormal sensations; can dress himself; sleeps better; walks much better, and is gaining strength and flesh, his weight having increased steadily at the rate of about two pounds per week.

Remarks—To further illustrate my view of the utility of galvanism in chronic forms of spinal disease, where the vessels of the cord in consequence of degeneration are becoming more and more incapable of performing their functions, I conceive that the electrical stimulus acting through the vasomotor nerves will, in the alternate use of the upward and downward current, not only fill and empty the vessels and thus materially influence the nutrition of the cord, but incidentally by dilatation and constriction restore the vessels themselves to their natural elasticity and use.

CONCLUDING REMARKS.

In closing I am constrained to say that the experience of the last year has confirmed my former opinion that electricity is as potent for evil as of good, and, like a toxic remedy for example, should always be used with discretion; or in other words, that it is never inert, even in small doses, and when not properly adapted to a case is necessarily injurious.

In presenting this paper, however, I wish to say, that I am open to conviction, and have studied the subject long enough to appreciate the remark ascribed to Edison, that "we do not yet know one-millionth of one per cent. about electricity."

THE HUMAN EPITRICHIUM.

ITS PHYSIOLOGIC FUNCTIONS AND ITS RÔLE IN THE CAUSATION OF SKIN DISEASES.

Read in the Section on Dermatology and Syphilography at the Forty-sixth Annual Meeting of the American Medical Association, at Baltimore, Md., May 7-10, 1895.

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There is no doubt whatever that the subject of histology is far from being exhausted and more especially in connection with development. Pathologic investigations, more especially in connection with bacteriology have, in later years, occupied so much of the attention of investigators that they seem to

have made the latter lose sight of the fact that we are not as yet thoroughly conversant with the morphology and development of normal structures and, as a natural result, histology has not advanced with the same rapid strides as other branches of investigation connected with the art of medicine. And yet, it is difficult to imagine a more fascinating study especially when it is taken up in connection with teratology and pathology, for in it lies that of which we are always in search—an explanation for the peculiar conditions or abnormal processes observed.

It may not be inappropriate to introduce the subject proper by a short description of the epitrichium. This layer of the skin was discovered and first described by Welcker.[1] In his examinations of the embryos of the bradypus or sloth he found it to consist of a continuous membrane which overlies the hairs, hence the name epitrichium from ἐπί and τρίχιον. This led to further investigations on his part and he found it to exist in various mammals and in man. The presence of this curious membrane in reptiles was clearly shown by Kerbert,[2] while Jeffries[3] and Gardiner showed its presence in birds. These authors are not the only ones who have written on the subject but it seems to have awakened but little interest among dermatologists if we are to judge from their works. So far as I know there is no systematic treatise on diseases of the skin which devotes any serious attention to this particular subject and yet it is one of more than ordinary importance in the consideration not only of the anatomy of the skin but in the pathogenesis, pathology and treatment as well as prognosis of some affections of the integument. Nearly all the work in connection with the epitrichium has been done by pathologists and embryologists. It is for this reason that I propose to devote some little time to the consideration of the anatomy of the epitrichium such as I have found it in my investigations. I also desire to say a few words in regard to the physiologic functions of the epitrichium as this is also a subject not touched upon in the works devoted to physiology.

The epitrichium may be described, in general terms, to be a temporary epithelial layer of the skin which disappears at birth, the time when its functional necessity has disappeared. It overlies the stratum corneum of the epidermis and is anatomically as well as physiologically distinct. From the investigations which have been made by competent observers and to whom allusion has been made above, it is a structure which is not limited to mammals but occurs in birds and reptiles as well, and doubtless it also occurs in amphibians and fishes. This constancy of occurrence is a circumstance which should constantly entitle this little-known structure to more consideration not only at the hands of anatomists and histologists but especially of dermatologists. In this paper I propose to describe this structure in the human being only as an attempt; to do more would require too much space at this time and is certainly deserving of separate consideration in a paper devoted to the comparative anatomy of the structure.

I do not intend to trace the development of the epidermal system in the human being as it is much the same as in all amniota. Those who are doing so can consult Bowen,[4] Minot,[5] Zander,[6] Curtis,[7] Unna[8] and others. In the human embryo the epitrichium may already be distinguished at the age of two and one-half months and from this time on it is not difficult to demonstrate its existence. It will be found to consist of one layer of cells with well-marked nuclei overlying another layer of cells which are flatter and provided with smaller nuclei, the whole resting on Bowen's basal membrane. As the embryo grows older the cells of the epitrichium grow flatter and larger and their contained protoplasm shrinks toward the center of the cells.

I have had occasion to make a number of preparations of the skin of embryos of various ages and taken from portions of skin removed from the scalp, behind the ear and from the groin. I have observed that at all ages from two and one-half months up to eight months the epitrichium could be made out quite distinctly. The cells in the younger specimens are larger and fuller whereas in the older subject they flatten, becoming fusiform in cross-section, but showing distinct nuclei, which are highly refracting and suggesting the presence of eleidin. In cross-section the stratum corneum can be made out as well as the stratum mucosum. The primitive arrangement of the cells and their grouping for the formation of the hair buds as well as the budding of the sebaceous glands is very plain. In the specimens from the older embryos the formed hair and the epitrichial cells which have been pushed aside by the growth of the former are plainly discernible. A horizontal layer of the integument, separated by macerating shows very plainly the presence of the epitrichial layer overlying that of the stratum corneum. At first the cells of the former are distinguished from those of the latter with difficulty but as development progresses the epithelial cells assume a more distinctly polygonal shape, the nucleus is more indistinct and the protoplasm concentrates, as it were, at its center. A certain amount of shrinking also takes place so that the cell is actually flattened despite the fact that the protoplasm has all gathered about one point. It is by no means a difficult matter to demonstrate the difference between those cells in integument derived from a fetus from six to eight and one-half months old. One prominent feature is that the cells of the epitrichial layer are much larger than those of the underlying structure and this disparity increases with the progress of development.

An interesting question arises as to whether the epitrichium finally merges into the horny layer or not. This idea has been advanced by some very competent authorities, but it is open to serious objections. If it becomes a part of the horny layer it should certainly be so already at the time the hair emerges from the skin and yet it is not. It is raised up by the growing hair. Furthermore, the cells of the epitrichium never become perfectly flattened like those of the horny layer and are essentially of a different nature morphologically, histologically and chemically. Moreover, it can be separated from the horny layer at any period and this separation occurs at or about the time of birth, so that a consolidation of the two seems hardly probable.

To attempt an explanation of the physiologic func-

[1] Haut von Bradypus. Halle, 1863.
[2] Kerbert, C. Skin a. f. m. A. xiii. 205-262. 1877.
[3] Jeffries, T. A. Proc. Boston Soc. Nat. Hist., xxii. 203-241. 1883.
[4] Bowen, J. T. Epitrichium. A. A. xvii, 689-882.
[5] Minot, Charles Sedgwick. Skin. Am. Nat., 575-578; Human Embryology. 548-554, 1892.
[6] Zander, R. Nails. His. Arch., 103-143. 1884; Nails. His. Arch., 273-326, 1886; Cornification. His. Arch., 51-96, 1888.
[7] Curtis, F. Nail. Jour. de l'Anat. et Physiol., xxv, 125-186.
[8] Unna, P. G. Anatomy and Development of the Skin. Ziemssen's Cyclopedia. 1885.

tions of the epitrichium is by no means an easy task, and that it possesses such there can be no question or doubt. It may be argued that it is simply a persistence of a type, but this is simply an explanation which does not explain, for even if it be such in man it must have some function in animals. In the bradypus it is much more developed and is separated from the embryo, thus constituting another amnion it is claimed. But, it may be asked, of what utility would such another amnion be? From an examination of this peculiar membrane it would seem that it is impermeable to water—at least it does not take up aqueous stains very readily, and from this the conclusion might be drawn that its function is to protect the skin from maceration through the action of the liquor amnii. And if death of the embryo supervene maceration will take place, although more slowly than when denuded skin is placed in water. This prevention of maceration is aided by another condition, viz., the retention of sebum upon the surface of the skin, and this is effected by the limiting action of the epitrichium which overlies this sebum or vernix caseosa which has formed. If this fat be carefully removed from the skin of a new-born infant and its covering membrane be carefully mounted it will be found to consist of a single layer of cells having all the characteristics of the epitrichium, which naturally leads to the conclusion that a complementary function is to retain the sebum and thus act further in preventing maceration.

A question which naturally suggests itself in connection with the epitrichium is in regard to the length of time which it persists, and as to whether it is cast off, and if so, at what period of fetal life does this occur? As the embryo increases in age the cells of the epitrichium become flattened and in this process the outlines become polygonal and the edges closely adherent to one another. This change takes place at those parts and at the time that the hairs and sebaceous glands assume form and the cells composing their first buds group themselves in a definite manner. As is well known, the development of the hairs and fat glands is rapid, so that by the time the shafts of the former emerge and the secretion of the latter finds its way to the surface the epitrichium has become a single, continuous, definite membrane composed of one layer of flat epithelial pavement cells rather large but quite resistent. In the locality where the hair development is strongest, such as the scalp, the epitrichium is first raised and in those places where the secretion of fat is most active it is resisted to the greatest degree. Where neither hairs grow nor sebum is secreted there is apt to be no separation at all, and this is best exemplified in the case of the nails. The eponychium, from ἐπί and ὄνυξ, as Unna has demonstrated it, is analogous to the epitrichium and may be found in earlier fetal life. Later on it disappears having, in all probability, been cast off in the course of the growth of the nails. The fact that the epithelium is found over the entire integument in earlier fetal life and that it becomes gradually separated in the later life of the embryo, is evidence of the fact that it is finally cut off at that period when it is no longer physiologically necessary. Furthermore, the fact that even at birth it may be found overlying the accumulated secretion of sebum is further evidence that the final casting off is a comparatively late process.

From the fact that, in the early fetal life the epitrichium can be easily demonstrated in the embryo, and furthermore that it is a distinct structure composed of a different sort of cells from those which form the outermost layer of the stratum corneum. In early developmental life it is closely adherent to the underlying layer of cells, but later on it separates in the manner which has just been given. But, should there be an arrest of development of the hairs and sebaceous glands the rising up of the epitrichium does not occur and this membrane adheres to that overlying the stratum corneum and does not become separated from it for a period of time almost if not coincident with birth. In the meantime the developmental impulse which should have expended itself upon the hair and sebaceous glands is diverted to the horny layer, and it undergoes a rapid and marked multiplication of cells, making it thicker and assume a horny appearance. That the epitrichium does not become a component part of the stratum corneum may be easily demonstrated by means of selective stains which will decolorize in the cells of the epitrichium and will not in those of the stratum corneum. A question which suggests itself in this connection is as to whether the thickening of the horny layer is due to a persistent adherence of the overlying membrane of which we are speaking. It is evidently not, but depends rather upon the arrest in development of the hairs and sebaceous glands, and this arrest is possibly dependent upon pressure exercised from without, which condition would also act as an important factor in producing an adhesion between the epitrichium and the stratum corneum.

When the process is one which is generalized the thickening of the horny layer is so also, and in consequence we have the different varieties of ichthyosis known in xerosis, ichthyosis simplex, and ichthyosis congenita or so-called harlequin fetus. These are simply different varieties of the same process, whereas ichthyosis hystrix and ichthyosis sebacea are somewhat analogous but have superadded an exaggerated secretion of sebum. But it must certainly be true that the ichthyotic process owes its origin to the same causes that the other forms do, and there is added thereto a certain development of the sebaceous glands, whose functions not only continue but are exaggerated by the stimulation exerted by the pressure due to the thickening of the stratum corneum. In all of the former ichthyotic conditions there is evident lack of development of the sebaceous glands, and in all forms of ichthyosis there is a deficiency in the number as well as size of all the lanugo hairs. The skin is harsh and dry or rugous and spinous, and it persists in this condition despite the best directed treatment, which can only mitigate it at best.

Should the epitrichium be adherent in localized areas only, we have as a result a localized and limited ichthyosis which does not extend beyond its primary limits. A peculiarity observed in connection with localized ichthyosis is the fact that it partakes of the nature of the portion of integument which is affected. If it be in the palms and soles the thickening is much greater than if it it occurs upon a flexor surface, and upon this latter it is never as well marked as upon the extensor portions of the integument, as is daily shown by observation. A peculiarity which has been noted in connection with both localized and generalized ichthyosis is the fact that it rarely if ever affects the face and axillæ. This is explainable by the further fact that in these localities the sebaceous glands

develop early and rapidly and attain a comparatively large size, as they also do in connection with the hair of the scalp, this latter being also singularly free from the ichthyotic process.

From an anatomic examination of the epitrichium in its different stages and from a critical examination of the various points involved in the question, it seems to me that there can be no doubt whatever that the epitrichium plays an important rôle in connection with the development of the human integument. It not only does this but it plays a by no means insignificant part in the production of some keratogenous skin diseases, and it is far from improbable that lichen pilaris is in some way indebted to the same structure for its origin. There are other processes of a similar pathologic nature which certainly should be investigated more closely. Like ichthyosis they are of frequent occurrence and much more common than is usually supposed, so that investigations of a thorough and convincing nature could be easily made. No attempt to include any considerations of this kind would be in order at this time in this paper, as it is the intention of the writer to deal only with general considerations, especial ones requiring more space than could be given at this time.

An explanation for the existence of the diseases of the skin which have been alluded to has been attempted by various authors, but it is one in which no satisfaction can be found. It is that ichthyosis is hereditary, and this assumption is based upon observations of one ichthyotic parent having one or more children similarly affected, or the condition being seen through several successive generations in members of the same family. It may be possible that an anatomic peculiarity is transmitted from parents to children, but that a pathologic process may be is a proposition repugnant to reason. If we assume that an anatomic peculiarity is transmissible from parent to child we can readily understand that an arrested or incomplete development or an exaggerated development may occur and, in connection with the subject under consideration, there could occur a transmission of the developmental peculiarity in the sebaceous glands whereby they would not attain their proper form, size and secretory functions, thereby permitting the epitrichium to adhere to the stratum corneum and this, in turn, act as the active cause of ichthyosis and allied conditions. This might be taken as a partial explanation, but the subject is so extensive that each portion of it, from its very nature, should be taken up separately and be thoroughly discussed.

THE THERAPEUTIC ABUSE OF OPIUM.

Read by Title in the Section on Materia Medica and Pharmacy at the Forty-sixth Annual Meeting of the American Medical Association, at Baltimore, Md., May 7-10, 1895.

BY G. WALTER BARR, M.D.

PROFESSOR OF MATERIA MEDICA, THERAPEUTICS, ETC., IN THE COLLEGE OF PHYSICIANS AND SURGEONS.

KEOKUK, IOWA.

While the writer desires to be enrolled among the conservatives in the midst of the present enthusiasm regarding the newer materia medica; that is, among those who insist upon rational evidence and clinical proof to a critical degree before a verdict in favor of some new chemical compound is added to the certainties of our therapeutic knowledge; yet it seems to him that in one direction at least there is too much leaning upon the old standards. While our knowl- of pathology and physiologic action has long since passed the point of the treatment of symptoms, yet we still cling to one drug which does most of its work in relieving symptoms only. Of course a drug which has the dynamic energy of opium must always be an equally potent power for therapeutic good; but it is not what can be legitimately done with opium, but what is actually done that is the subject of this paper. The present purpose has nothing to do with drug habits and the curse of morphinomania which to-day is probably doing more harm in the United States than alcoholic intemperance is to be properly charged with. The writer believes that the medical profession as a whole, and of course with shining exceptions, is still too prone to use opium as our grandfathers did and that the equipoise between pathology and the dynamic effects of the drug is as a matter of fact a thing to be sought after to-day rather than a thing which is.

Chemically and physiologically opium is perhaps the most complex drug in the pharmacopœia. It contains a large number of active principles which have been certainly isolated; a number more that are probably present in the crude drug, but claimed with some reason to be merely products of chemic manipulation; and also may contain some not yet identified as chemic entities by laboratory research. It seems a little strange that with the present tendency toward the use of drugs uncombined with others in one prescription, so many active principles should be so often prescribed at once under the title of opium. The retort that the drug opium has its own physiologic action which is well known from years of experiment, clinic and otherwise, will probably not be heard from one who has taken pains to ascertain definitely and exactly what we know of its dynamics to-day. That the combination of so many active principles has, by virtue of the correlation of physiologic forces, a dynamic action of its own goes without saying; that this action can not be prognosticated with much certainty is proven by the large number of cases of alleged idiosyncrasy in evidence. That opium is of great therapeutic value is claimed at the outset; that it is over-rated is also contended.

When the natural polypharmacy of opium itself is avoided, the resort is nearly always to its most active constituent, morphin. As a matter of observation, and one of those things which can hardly be proven, the number of physicians, East and West, who prescribe or leave a single dose of morphin as part of the first treatment for anything from acute alcoholism to typhoid fever is greater than should be told except under the rose. The patient soon feels better from the stimulant and perhaps rests quietly later from the after depression. The patient is fooled, the friends are fooled, and too often the physician is fooled, into believing that the net results of morphin were beneficial. It is not necessary to discuss the real value of this routine practice which generally retards recovery for several days or a week. The effects of morphin upon the secretions, metamorphosis and the disposal of waste products are exactly what is not desired in most cases of disease. Yet morphin is usually chosen to produce certain effects upon the nervous system without regard to its energetic action in other directions. For many of these effects some other drug which has not the disadvantage of morphin may be chosen. For pain, either

acetanilid, antipyrin, aconite, strychnin or codein will often be as efficient, if the drug be chosen to fit the pathology present, and none of these do as much damage while they are relieving the pain as does morphin. Codein is being substituted for morphin in these later days to a gratifying extent, but is not yet fully appreciated. The writer is thoroughly satisfied that it does not produce a habit even in highly sensitive neurotics, and that it acts with little energy upon the digestive tract and heart. As a somnifacient morphin has been nearly driven out of use by the products of the modern chemist, and in other fields also should be discarded. As a cardiac stimulant, morphin acts quickly and usually energetically it is true; but the after-depression which always comes after a dose of morphin may be avoided by using instead the invaluable strychnin, the swift glonoin, the energetic caffein, the powerful digitalis, or even the treacherous atropin in proper dosage. To use morphin or opium for a condition of nervous excitation and exalted reflexes is in many cases like stunning a refractory patient with a club. Valerian, the bromids and hyoscyamus will generally give better therapeutic results of greater permanence and with less risk.

It is in those diseases of the digestive tract which are most common in summer that opium is the medium of most harm. After all that has been written about washing out the intestines with solutions of various antiseptics, many practitioners have not relinquished the mental association of diarrhea and opium which was almost universal a half century ago. Whether one believes in rational medicine or in statistical empiricism, close observation must drive him to the conclusion that very rarely indeed is opium indicated in the treatment of diarrhea. The trouble is that here the symptom overbalances the pathology in psychic impression on both patient and physician, and symptomatic treatment still survives to a very considerable extent. Without going into detail as to pathology, it may be said that a diarrhea needs usually some drug which increases the excretory functions and thus drives out of the body something which by its presence is producing the flux from the bowel. Salol and other antiseptics by the mouth; various solutions injected to flush out the intestinal tract and make it bacteriologically clean; a saline cathartic; a cholagogue and especially one acting also on the other secretions of the digestive apparatus; camphor, aromatics, the bitters and the digestive ferments—these medicines, all of which exert a dynamic energy in exactly an opposite direction from opium, effect a cure in much less time than does the latter. Of course opium temporarily relieves the chief symptom at once; and when its influence has subsided and the disease still persists the condition is called a relapse or a new attack.

The writer knows that he is writing what to some are platitudes; he foresees that the criticism will be made that he is fighting an immaterial ghost. And yet, craving the indulgence of those who do not offend the genius of rational medicine in the ways mentioned, he has been driven to writing this paper by observations upon the practice of really excellent physicians and by noting the frequent recurrence of opium, laudanum, deodorized tincture of opium and morphin[1] in the prescriptions filed away by the pharmacists. The farther the investigations were carried the greater became the divergence between the teaching of modern medical science in school and book and journal and the practice of the profession at large. While we are making such great additions to our armamentarium, it is not unimportant that we throw away some of the old weapons which have been rendered obsolete by modern ideas and which have become merely impedimenta.

It goes without saying that opium has a real value therapeutically in certain inflammations, great pain, rare forms of diarrhea, as a splint for the intestines and in some other directions. Abuse does not imply absence of use.

[1] Careful inquiry among pharmacists, druggists in towns, and small wholesalers selling to doctors direct, brings the universal response that in the country the use of opium has not decreased; and in the city it has lessened *except* in diarrhea prescriptions; morphin has increased in both city and country in physicians' prescriptions and bedside use, especially hypodermically and by recent graduates. A great deal of certain proprietary "substitutes" for opium which are really the deodorized tincture is used in the West. In the paper "opium" means any preparation of the crude drug.

THE DANGERS OF SYPHILIS AND HOW TO AVOID THEM.

Read in the Section on Dermatology and Syphilography, at the Forty-sixth Annual Meeting of the American Medical Association, at Baltimore, Md., May 7-10, 1895.

BY ALGERNON S. GARNETT, A.M., M.D.
HOT SPRINGS, ARK.

I do not feel that an apology is necessary for briefly calling the attention of the profession to the necessity for greater care and honesty in dealing with syphilis and its dangers. No disease is so universally distributed and none which is so insidious in its invasions, even into the ranks of the most innocent. I do not believe that there is as much candor displayed in discussing this disease as its gravity demands, and that by our silence and easy acquiescence in the mistaken idea of its harmlessness, after a year or two of treatment, we are adding to the burdens of mankind. The dangers of syphilis are most frequently its remote effects, the immediate symptoms, such as chancre and the lesions of the skin and mucous membranes passing away quickly under appropriate remedies. We find the remotest effects in all the different forms of paralysis, locomotor ataxia and insanity. The insidious microörganisms have worked the destruction of the nervous system, while the surgeon was watching for an outbreak. The quick subsidence of the external or objective symptoms of this disease misleads the patient and the doctor, and has induced some of the most distinguished men in the profession to declare that it was benign and self-limiting, that it would expire by the statutes of limitation if let alone.

In the same catalogue should be placed those rhetoricians who believe or so state that a year or two of mild treatment will cure syphilis and enable the patient to marry without apprehension. These grave blunders are helping to reverse the conditions favorable to the higher development of the human race and handicap it with leprous diseases, which would not be allowed perpetuation in the lower animals under our control. False sentiment should have no standing in our profession, whose influence should be weilded for posterity, so defenseless against its cruel parents.

How can we measure the duration of diseases induced by microörganisms, which may sleep for years before wakening to a destroying activity? It is a well-known fact that the lower organizations will

live in a state of inactivity for years. It is this phase of the subject that should make us hold every case of syphilis *sub judice* for years, at least seven. I do not advise active treatment for that period, but after the first three years of active treatment with mercury, a mixed treatment during a month twice a year for three years more, will serve to prevent any further destructive action in ordinary cases.

The purpose is to keep the disease and its manifestations subjected to remedies. The absurd belief entertained by many, that mercury produces paralysis and locomotor ataxia, has been so often controverted in my experience that I would not discuss this feature of the subject, were it not for the grave injury which it is doing. I am treating now patients with locomotor ataxia and in nearly every form of paralysis, to whom I am giving maximum doses of mercury with the best results. This has been my experience for a number of years. My observation has been that nearly all the cases of syphilitic paralysis have been due to treatment for too short a period, or that there never had been a full mercurial effect produced. I feel quite sure that I shall be sustained in this statement by every close observer of the phenomena of this disease. In my discussion of the proper treatment I assume that all other indications have been filled; that the patients have lived soberly and carried out intelligent hygienic rules for their guidance. Had the theory that mercury produced paralysis been verified, the syphilitic paralytics whom I have treated during the last twenty years would have succumbed to the mercury which I gave, as I am very generous in my prescriptions. It seems to me to be a logical conclusion that syphilis is due to a protozoon, a microörganism, a living entity. The whole theory of treatment is to kill this living germ without killing the man in whom it is existing. So far progress in medicine has not discovered anything better or so good as mercury with which to combat its injuries and to limit its existence.

As the objective of all treatment is to poison the specific germ, and at the same time render the patient unfit for its abode, it follows that the greater the quantity of mercury that can be introduced, without danger, the better the protection given. The action of mercury is directly as a poison and indirectly as a tonic, in other words, when the microörganisms are killed or weakened, the system will re-assert its normal vigor.

If syphilis is due, as is now believed by scientific men everywhere, to a protozoon, it would account for many cases of attenuated innoculations which do not give the characteristic symptoms and features of the disease that we are accustomed to recognize and which render our diagnosis difficult.

Many years since, Kassowitz, of Vienna, who had charge of the hospital for syphilitic women and children, stated that he frequently met with women married to men in the later stages of syphilis (and who had been previously healthy) cachectic and devitalized, without showing any other symptoms of a specific contagion, and yet who failed to improve under any other than specific treatment. He believed that in many cases a married life between a man with tertiary syphilis and a perfectly healthy woman would be followed by the loss of strength and vitality to the latter.

While my own experience does not confirm his in many particulars, I have seen so many suggestive cases that I feel as if I were leaning to virtue's side when I discourage marriage in all syphilitics who had not been treated for many years and who were not leading a life conforming to the laws of hygiene.

There is an obligation on the medical profession to see to it that the progenitors of future generations do not hand down diseased bodies and minds. This responsibility should not be ignored, however great the temptation to popularize ourselves by pursuing a different course. Let us guard the race by establishing a quarantine against all contagious diseases. To prevent the crime of the marriage of syphilitics, *in the earlier stages*, would it not be commendable to have a law requiring a health certificate from a board of examiners accompany every marriage license?

Very candidly and frankly, I see no hope for the syphilitic at present except in mercury and the iodids, although I fully believe that the day is not far off when some virus will be used for innoculation, which will relieve mankind of the frightful results of this malady. Experiments with horse serum are in the right direction.

THE NEW SURGICAL SPLINTING.

Read in the Section on Surgery and Anatomy, at the Forty-sixth Annual Meeting of the American Medical Association, at Baltimore, Md., May 7–10, 1895.

BY EDWARD A. TRACY M.D.

MEMBER OF THE AMERICAN MEDICAL ASSOCIATION.
BOSTON, MASS.

Two years ago at the Milwaukee meeting of the ASSOCIATION, I had the honor to read a short paper entitled "A New Material for Surgical Splints and Spinal Jackets, with a Method for Applying It." A few months later I read before the Pan-American Medical Congress held in Washington, a paper entitled "A Brief Splint-Technology for Surgeons," in which has been outlined a scientific system of surgical splinting. As a small contribution to the filling in of this outline I shall present to-day four new splint forms and report cases illustrating their use. Before presenting them to your consideration, permit me to speak for a moment of the material used in their construction. It is composed of crushed wood-fiber, rolled in a rugose fashion, and in which a fabric is incorporated during the rolling process. The material is the result of original experimental work, having for its object the attainment of a moldable material that would comply with the requirements of a scientific method of surgical splinting. The experimentation was done by me for the most part in a pulp mill, the use of which was courteously placed at my disposal by my kind friend, Mr. Charles H. Fish, of Manchester, N. H. The material and method of splinting as presented to you, represents the practical solutions of the several problems met by me during the progress of my work, problems relating to the toughness, plasticity, rigidity and technical manipulation of a splint material having for its basis wood-fiber. None the less do I believe that the work presented to your consideration will seem admirable for its simplicity.

Having considered the splint material, allow me to describe briefly the ordinary manner by which I make from it a splint. The first thing to be done is to cut the splint blank from a sheet of the material. The outline for this blank can readily be gotten for the ordinary leg and arm splints, by simply placing a sheet of the material against the limb and pencil-

ing the outline directly on it. In other cases a pattern of the splint blank can be made by cutting a piece of paper the proper shape to enfold accurately the part it is desired to splint, and then laying this paper pattern on a sheet of the material and pencilling the outline of the pattern on it. By following the outline, the splint blank can be cut from the material by means of a jack-knife or a pair of shears. A suitably shaped blank having been cut from the material, it should be moistened so as to become plastic or moldable. The moistening can be done with water, but it is better to moisten the blank with a solution of potassium silicate. The ordinary solution sold for surgeons' use and further diluted with half its bulk of water I find serves admirably. This solution adds considerably to the rigidity of the splint. It is also an antiseptic. The moistening is best done by painting the solution first on one side of the splint blank and then on the other side, and so on two or three times, using for the purpose an ordinary flat paste brush. The splint material will be seen to absorb the moisture, and after a minute or two will become quite plastic or moldable. The blank should then be applied directly to the limb and a roller bandage snugly applied over it so as to make it conform to the shape of the part we intend to splint. The blank should be carefully removed and dried over a kitchen fire, gas stove, gas jet or other sufficient source of heat. While it is drying the splint should be watched and helped, by holding it properly, to retain the right shape. Before it is completely dry, it should be applied to the limb for a moment and, if need be, corrections made, before complete drying permanently fixes its form. The drying of the ordinary splints averages from ten to fifteen minutes. A single layer of merino (to be had in most households from an old garment of underwear) or a few layers of gauze is all that should be placed between the splint and the skin when applying the splint to the case for which it has been made.

In many cases of simple joint fixation, if the proper thickness of the splint material be used, (it is manufactured in sheets of three different sizes by the American Wood Pulp Company, of Boston.) the splint blank can be molded over the parts and a bandage applied directly and the splint allowed to dry on the limb without removing it. The four splint forms which I shall here describe have been chosen because of their utility, simplicity, and to suggest to you the scope of the new splinting. I am sure that the practitioner who devotes a little attention to them, or even to the first splint form to be described, will be rewarded with the result. These forms can serve as an introduction to the use of my splint material and after familiarizing himself with its characteristics the practitioner will be enabled to work it into such forms as the indications met with in any given case may call for. This mastery of the material is readily attained by the careful practitioner. But should he not care to push his conquest of it further than these simple splint forms, I repeat, the time so spent will repay him, and he will be surprised at the readiness with which he can get an efficient fixation of the knee, elbow, ribs (as much as the anatomical conditions of the ribs permit) or hip. The esthetic feature of the new splinting, both of color and form, and its comfort to the wearer by reason of its lightness, I shall but mention; they are best appeciated by the patient.

A LATERO-POSTERIOR KNEE SPLINT, FOR FIXATION OF THE KNEE-JOINT.

The pattern for this splint should be cut so as to embrace the posterior and one of the lateral aspects (preferably the inner) of the thigh and leg, extending from well up the thigh to a few inches from the ankle. Following this pattern for a guide, the splint blank should be cut from a sheet of the splint material having a thickness of about 2 mm. The splint blank should be moistened, molded and dried in the usual manner before described. This splint well illustrates the mechanical principle by which the breaking strain of any piece of flat material is greatly increased as it is made to assume the tubular form, or by having a flange in its form. A piece of the splint material of the thickness described, molded over the posterior aspect of the limb only, could not be expected to serve for the fixation of a joint con-

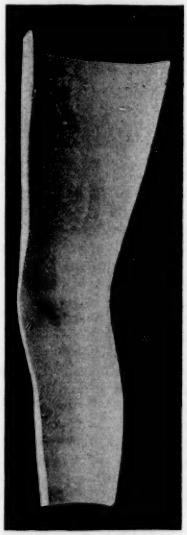

FIG. 1.—A Latero-posterior knee splint, left.

trolled by such powerful muscles as in the knee. But by simply widening the blank so that it can be molded over a lateral aspect of the limb as well as the posterior aspect, the needful element of tensile strength is increased in far greater proportion than to the extra amount of the material employed. Another advantage is that the splint so molded and applied to the limb can not move from side to side; its flange molded over the side of the limb prevents this; it therefore gives a fixation superior to any posterior or ham splint. This splint is illustrated in Fig. 1, which is taken from a photograph of one molded on a patient (J. W., aged 53) by me at the Boston City Hospital (by courtesy of Dr. Thorndike). The case was acute exacerbation of a chronic synovitis of the left knee. The splint was worn three weeks with satisfactory results. At the same hos-

pital I treated a young man with an acute synovitis of the right knee, of traumatic origin. There was considerable effusion into the joint. A similar splint was molded on the patient's limb and worn for eight days. The effusion and tenderness had then disappeared; the patient was ordered to use the limb carefully, and to return to his organ studies. He did so without any recurrence of the trouble.

AN ELBOW SPLINT (EXTERNAL) FOR FIXATION OF THE ELBOW JOINT.

This splint serves for fixation of elbow joint and as it does not impinge upon the internal aspect of the joint allows a ready inspection of the internal condyle without the necessity of removing the splint. It is of easy construction. A pattern of the splint blank is cut so as to embrace the flexed arm and forearm; the upper part from the fold of the axilla to that of the elbow, the lower part extending from the olecranon and fold of the elbow to the knuckles of the hands, the arm being semi-pronated. The pattern should be cut so as to fold over or embrace the ulnar side of the forearm and hand. Following this pattern for a guide, the splint blank should be cut from a sheet of the splint material having a thickness of about 2 mm. It should then be

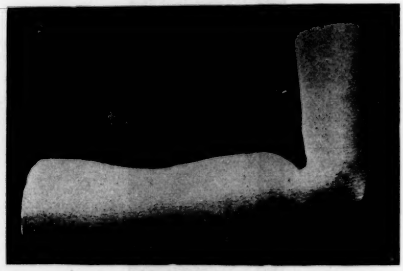

FIG. 2.—An external angular elbow splint; left arm. View is of the outer aspect.

moistened, molded and dried in the ordinary manner before described. The slight redundancy of material found near the olecranon when molding the blank should be pinched up between the fingers and bent over so as to lie against the splint. This splint is illustrated in Fig. 2, taken from a photograph of a splint molded by me on the left arm of Willie M., a boy who was brought to my office with a backward dislocation of the elbow and a fracture of the internal epicondyle, caused by a fall from a height of about five feet. I reduced the dislocation and molded the splint in accordance with the technique given above, and bandaged it to the arm, leaving the internal condyle exposed to sight. I then placed a cloth compress over the internal epicondyle and bandaged it so as to retain the fragment in its proper position. After six days the splint was removed daily so as to exercise the the joint with gentle passive motions, and after eleven days the splint was omitted entirely. On the twentieth day all motions of the joint were normal, except extension, which was slightly limited. The boy then disappeared for awhile, and when next examined, three months after, nothing abnormal except a very slight obtundity of the internal epicondyle could be detected; all the motions were perfectly normal.

A similar splint was employed in the case of A. N., an old man treated by me at the Boston City Hospital (by courtesy of Dr. Thorndike). The case was a fracture of the right ulna at its middle third, caused by the kick of a horse. The fixation of the fragments was attained by this splint supplemented by a palmar splint extending from the elbow fold to the wrist. In seventeen days there was union; on the twenty-first day the angular splint was cut across below the angle of the elbow, so that it became a simple dorsal forearm splint, leaving the elbow joint free. For safety this splint was left on for eight days, and after twenty-nine days from the beginning of treatment the patient was discharged well, with normal mobility to the arm and forearm, and but a moderate callus. The indication in this case, complete immobilization of the ulna, was read-

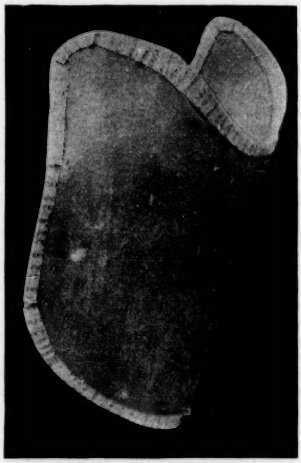

FIG. 3.—A splint used in a case of rib fracture; left. A front view of the splint.

ily met by fixation of the elbow joint and of the wrist joint by aid of the lateral angular splint and boxing in of the forearm by aid of the palmar piece from the elbow to the wrist. The result was considered excellent considering the age and condition of the patient (about 70 years, and with a double cataract and atheromatous arteries).

A SPLINT FOR RIB INJURIES.

This splint is a very simple one and readily constructed. It should be molded over the injured side of the chest, from an appropriately shaped splint blank. The blank varies in shape according to the situation of the injury and also to the fact of the chest being that of a male or female. These slight variations of shape need not be detailed, as they will readily suggest themselves for the case under treatment, when the principles governing the treatment are understood. Fig. 3 is from the photograph of a

splint molded over the chest of Mrs. C., aged 58 years, treated by me for fracture of the eighth and ninth left ribs. The splint was worn twenty-one days, being easily retained in position by a snugly applied swathe, to which was applied a shoulder strap consisting of a piece of cotton cloth held by safety pins, over the left shoulder. This method of treatment for the ordinary case of fractured ribs seems a rational one. I do not understand how adhesive plaster, or a simple swathe can protect the broken bones from external pressure that may occur at any time, and particularly when the patient sleeps. The rib splint, however, spanning the weakness in the chest wall and resting on the secure foundation of the sound ribs, prevents undue pressure from reaching the point of fracture. This, doubtless, explains the comfort with which the splint is worn. Moreover the indication to limit motion in the affected side is effectually met by a properly constructed splint molded so as to fit the half chest in the position it assumes on forced expiration. The splint thus made tends of itself to hold the half chest in that position, and its efficacy in this respect is perfected by the swathe with shoulder strap attached as described, which maintains it in position.

A HIP SPLINT.

This splint furnishes a ready method for obtaining an efficient fixation of the hip joint without the extraneous aid of blacksmithing or special tools. A pattern should be cut so as to extend from an inch or two below the axilla to about the same distance below the knee. The posterior border of the pattern commencing at the upper border should follow near to the spinal column, and over the buttock down the posterior and inner surface of the thigh to the inferior border of the pattern below the knee. The anterior border of the pattern commencing at the superior border below the level of the axilla, should pass over the chest and belly near to the middle line of the body, striking off below the umbilicus to cross the lower third of Poupart's ligament and down the inner surface of the thigh to end at the inferior border below the knee. Following the pattern for a guide the splint blank should be cut from a sheet of the material having a thickness of 2 mm. This splint blank should be moistened, molded and dried in the manner described above. Another blank should now be cut from a sheet of thinner material, and it should be moistened in like manner and molded over the other one so as to serve as a reinforcement. The two forms should be laid together as one, with a layer of liquid glue between them, and applied as one to the limb. While molding this splint the patient should be laid on his back with the limb extended in a line with the body. The moistened blank should be bent so as to embrace the affected thigh and side, and molded over the parts by means of a roller bandage. The splint should be finished by binding its border with strips of chamois skin fastened on with a cheap liquid glue. Immediately after binding the splint it can be applied to the patient, the glue setting as well with the splint in position. This splint should be properly bandaged to the body if we desire the maximum of hip fixation. This is done by taking a few tight turns around the hips with the roller bandage and then bringing the roller down so as to embrace, in figure 8 style, the upper portion of the affected thigh and the opposite hip. A bandage should then be applied from the lowest portion of the splint, embracing first the knee and thigh, then the hips and finally the chest. The bandaging can be prevented from slipping by pinning together the layers of bandage where they overlap. The splint illustrated in Fig. 4 is taken from a photograph of a splint molded by me on Cornelius O'H., a boy aged 8, with hip joint disease of the left hip. Night cries and pain ceased shortly after its application. In three week the boy was enabled to be up and out by means of crutches and a raised shoe. After four months, tenderness on deep pressure over the capsule of the joint had somewhat diminished, but flexion and outward rotation were considerably impaired. The splint was worn for eleven months with no setback to the improvement of the patient. The parents of my patient then insisted on the withdrawal of all treatment, crutches, raised shoe, and splint. At that

FIG. 4.—A Hip splint; left. View is of the posterior aspect.

time there was a slight limitation to flexion, the left gluteal fold was absent, and considerable atrophy of the left thigh present, though not as much as six months before. I warned the parents as to the probability of their being trouble in the joint, but their determination to have the boy use his limb remained unchanged. They promised me to watch for symptoms and on the first appearance of a limp or pain to resume treatment. There has been no recurrence and now (April 27), seven months since omission of treatment, upon examination I find his gait, walking and running, normal. No atrophy of thigh or leg. Gluteal fold present, no tenderness of hip joint. All motion except extreme flexion of the thigh normal. Upon extreme flexion the pelvis moves with the thigh bone, though no pain is felt. The boy has been attending school since January, and is as full of life on the streets as any of his comrades. [Jan. 14,

1896, over fifteen months since omission of treatment, the boy is as well as ever.]

It needs but a little consideration to understand the thorough fixation procured by this splint when correctly applied. A cursory examination will show that adduction, abduction, extension and flexion and their combination, circumduction, are out of the question with this splint in position. It is left only to consider the remaining motion of the hip joint—rotation. It is prevented by the grasp which the splint maintains on the knee, and also by its forward pressure on the great trochanter. The trochanter, it will be remembered, swings backward in an arc on outward rotation of the thigh.

In concluding my paper I will remark, that because of circumstances not controllable by me, the splint material has not been accessible to you all, and therefore you can not testify to the advantages of the new method of surgical splinting from personal experience with it. It gratifies me exceedingly, however, to be able to refer to Dr. George W. Gay, of the Boston City Hospital, who wrote in a note to me last November: "You may quote me as being favorably impressed with your surgical splinting after a considerable personal experience with it." The object of my work in surgical splinting is to emphasize the practicability of living up to the principle of surgical practice enunciated by Dr. H. O. Marcy: "The surgeon must make a splint to fit the limb and not the limb to the splint." I believe, now that the splint material is accessible to the general practitioner, that the method described, will result in the completion of a scientific system of surgical splinting that will do honor to our ASSOCIATION and our country.

NOTE.—Since reading the above paper I have done considerable splinting, including cases of hip, knee, and ankle joint fixation, Collis' fracture, using only water as a moistener, and *allowing* the splint to dry in position on the limb. In several cases absolutely nothing was placed between the limb and the splint, and though the splint was worn for several weeks no excoriation of the skin occurred. The object of this note is to emphasize the simplicity of the technique now employed—water alone being found essential, the drying of the splint off the limb, and the use of a silicate solution being unnecessary.

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SOME REMARKS ABOUT ASEPSIS IN MILITARY SERVICE.

Read at the Meeting of the National Association of Military Surgeons, Buffalo, May, 1895.

BY LIEUT.-COL. EDWARD BOECKMANN.

ASSISTANT SURGEON-GENERAL OF THE MINNESOTA NATIONAL GUARD.

It is with some hesitancy that I venture to bring such a worn-out topic as asepsis before this distinguished assembly, which is represented by our foremost bacteriologists, our best surgeons and by men who, perhaps, daily have opportunity to rejoice in the good fruits of their aseptic efforts. But when I at the same time consider that the last word on asepsis has not yet by any means been spoken, that our views are subject to change and our opinions vary, that there yet prevails considerable difference and even uncertainty with regard to the value of the different means and apparatus of disinfection, that daily, partly through ignorance and partly through negligence, violence is done to the simple but strict laws of asepsis, and that we military surgeons, because of the peculiar and difficult conditions under which we must exercise the aseptic art in service, particularly should be conversant with the principles of asepsis, I certainly need no apology for presenting that which at first sight appears to be A, B, C to us all.

Our surgical enemies, which all of us know so well, either through our practice or through our books, and which are distinguished by their ubiquity and numbers, less by their tenacity of life, we endeavor to keep at a distance in different ways; we destroy them, we remove them or we render them innocuous. Could we simply destroy them all this would be the most ideal procedure, but since this, unfortunately, is impracticable, we must in every case avail ourselves not only of the chemic means of disinfection, which are the proper germicides, but also of mechanical and chemic measures whose usefulness consists in the removal and the inhibition of the growth of microorganisms.

MECHANICAL DISINFECTION.

Since we can not boil our hands or put our patients in a steam sterilizer and since the chemic disinfectants can not sterilize an infected skin in such concentration as can be used in practice and in such time as is at our disposal it is clear and universally conceded that the crucial point in the sterilizing process of the operator's hands and the patient's field of operation must lie in the mechanical removal of the present and innumerable microörganisms in these situations. This can also be essentially accomplished by razor, nail-cleaner, water, soap, brush and towel, but any absolute surgical operation is hardly within possibility, as the surgical microörganisms not only are met with in the deeper epidermic layers, but also in the different adnexa of the skin. That disinfection which results from a careful mechanical treatment of the skin, has been made fractional by different authors, some putting it at a half, others at two-thirds, while, as is well known, there are those who both on this and the other side of the Atlantic find in the mechanical operation the ideal in surgical sterilization of the epidermis. In my opinion we can not well express in definite fractions the aseptic value of mechanical disinfection, since in the first place individual differences obtain in high degree and since in the second place mechanical disinfection is an art exercised by different operators in extremely varying degrees of efficiency. It is unfortunately not to be denied that those operators who really understand how to wash themselves surgically still are in the minority, which is deplorable, as I am one of the many who have arrived at the conclusion that mechanical disinfection can nearly approach surgical asepsis, if practised intelligently. We should certainly be spared the painful spectacle of seeing a surgeon omit to remove his finger rings and at the same time it is only a reasonable demand that the shirt sleeves are rolled up beyond the elbow. It is unquestionably proper to use a razor on the field of operation, not so much for the sake of the hair as for the skin, whose disinfection is greatly facilitated. The surgeon himself by rights does not shave his arms or hands, which would be a necessity if this process showed a *sine qua non* for the disinfection of the hair. The washing itself must be performed in a routine manner; first a general soaping and scrubbing, thereupon a special ditto of each part. The extensor surface of the arms is reached by flexion and not by extended pronation or supination. Special attention is given the finger ends, the nails and the folds between the fingers. The more changes of

the water (preferably running and sterile), the higher temperature (up to 120 degrees F.), the cleaner the brush (best a stiff one), the purer the soap (boiled, green soap) and the longer time devoted the better is naturally the result. It is certainly proper that we afterward wipe the skin treated in this manner with a sterile towel and when this is done, we have in all essentials removed what practically is all-determining, and we can, as a rule, proceed to any operation whatever with a good conscience and with justified hope for an aseptically good result so far as the operator's hands and the patient's field of operation, treated similarly, is concerned. Yet it is necessary beyond being a good washerwoman to be both an able and experienced operator in order to attain aseptically good results from the mechanical disinfection alone, and as it falls to the lot of comparatively few to become at the same time able and experienced surgeons, it is advisable for those who are not specialists, that they do not only extend the traditional one minute, but that they add something more. It is customary to scrub the skin with strong alcohol, ether or turpentine after the thorough washing with soap. The method is certainly justified, as the above named articles are of recognized value in the removal of grease spots. To be sure, we advance a step further by our energetic scrubbing with one of these agents, followed by drying with a sterile towel. There are even those who consider alcohol omnipotent in the disinfection of the skin, and we can not very well refute such an assertion. However, these strongly fat-dissolving agents make the skin dry and brittle—an unpleasant occurrence for sensitive skin—for which reason many, among them the author, have discontinued the use of both alcohol and ether and preferred to make the remaining microörganisms inocuous by chemic agents, of which more below.

By the mechanical disinfection we aim to the greatest possible extent to dissolve and remove the oily skin covering, rich in bacteria. This fat plays an important rôle in the economy of the skin. It is to keep it pliable and elastic; it is to receive and arrest and thus prevent the innumerable bacteria, which come in contact with it, from causing local or universal trouble. Therefore it appears to me proper to restore to the skin that protective we have endeavored to deprive it of, in the form of a sterile fat, not only for the sake of the skin, but also to cover up and arrest the remaining bacteria and thereby prevent them from infecting the operation wound. The idea is not new, but is for the time being hardly realized beyond examinations and operations on the vagina and the rectum. I believe that this method has quite a future in surgery generally, if we employ a material of the same composition or quality as that which is found upon our skin. Lanolin is the fat which I have tried for this purpose during the past year, and provisionally I have every reason to be satisfied therewith. Lanolin is, as known, a product of sheep's wool; it does not saponify or become rancid, has a remarkable penetrating power and sticks excellently to the skin. Lanolin absorbs water greedily and the commercial article contains about 25 per cent. This is simply called lanolin and forms an almost white, salve-like mass, while the dehydrated lanolin—lanolinum anhydrium—looks like honey and is of the consistency of vaselin. Pure lanolin is without smell or taste. Dehydrated lanolin ls simply sterilized by boiling. It boils at a temperature of above 400° F. —a temperature which instantly destroys all bacterial life. The ordinary lanolin can not be sterilized in this manner, as the contained water will be separated and on boiling cause the lanolin to be thrown to all sides. It must first be dehydrated, which is fairly well accomplished by heating in a steam sterilizer for some time, after which it is set away to be cooled. The water will accumulate below while the dehydrated lanolin will solidify above. When this has taken place, a hole is made through the lanolin and the water is emptied, after which the lanolin is carefully heated up over a weak flame to boiling point; it is now surgically sterile. A convenient mode of keeping sterilized lanolin ready for use is to pour some into a sterilized glass-stoppered or patent-stoppered flask and add to it four or five times the volume of anhydrous ether, which keeps the lanolin dissolved. If a little of this solution is poured on the hands, a few moments suffice to rub it well into the skin; the ether evaporates quickly and the lanolin remains. Another method convenient in military service is to run the lanolin, when melted, into collapsible tubes, such as painters use, sterilized beforehand by boiling. A small amount is pressed out and well rubbed into the skin, after which the excess is removed by a sterile towel and pressing out from under the finger nails.

CHEMIC DISINFECTION.

After having softened up and removed the epidermic dirt mechanically, it is a standing rule to wash or scrub the skin with corrosive sublimate solution to destroy the bacteria which have not been or can not be removed. Theoretically no criticism can be made against this practice; practically I am strongly inclined to believe that the whole is a comedy of errors. It is not denied that corrosive sublimate is chemically the most powerful germicide at our disposal, but Geppert's well-known experiments, which have been corroborated by later investigators (Abbott and others), have long ago proven that it not only requires a 1:1000 solution a long time, even hours, to destroy surgical bacteria, but also that the latter must be exposed on pure culture, conditions which rarely obtain in practical life, not even after the most thorough mechanical disinfection. Corrosive sublimate must form a chemic combination with the protoplasm of the microörganisms in order to unfold its germicidal power, which does not occur when these are imbedded and hidden in fat, albuminous material and dirt. It is an every-day occurrence to see how a sublimate solution rolls off the skin like water on a duck's back, without the least impregnation; the result is in the main the same when the skin is washed beforehand with warm water, soap and brush, or even with alcohol. No name-worthy difference is to be remarked with the addition of tartaric acid to the sublimate. Even if, with an energetic brushing extending over minutes, we succeed in forcing some of it into the skin, this impregnation is always in the first place superficial, and in the second, the time is too short for any germicidal action; thereto is added the wiping or washing off of the excess of sublimate whereby we, for justified fear of toxic action, renounce the antiseptic rôle which these drops could play in the operation by inhibiting the growth of present germs. For these and other reasons I have entirely abandoned sublimate in the disinfection of my hands, while I still recognize its value on

the site of operation when, as is the rule in civil surgery, we can expose this to its continued action for a day or two in weak solution. That the skin in this manner can be impregnated and the bacteria killed or rendered innocuous, I see a proof of in the eczemas which arise and in the cases of poisoning which may be the result of these wet applications; cultures from scrapings of the epidermis are also negative, as a rule.

The English antiseptic, carbolic acid, is by far less germicidal than sublimate, for which reason this agent for the same purpose is used in per cents. where sublimate is used in per milles or fractions thereof. But carbolic acid has the undeniable and great advantage over sublimate, that it penetrates the skin without previous preparation of the latter. Thereupon depends its antiseptic power, and consequently also the danger of poisoning. Carbolic acid will not be able to kill anything in the short time and in the strength which is at our disposal; it has no justification as a germicide, an agent which annihilates the vitality of the microörganisms, but as an antiseptic, an agent which inhibits their growth without destroying their vitality. This last is sufficient for the purposes of the surgeon, since the phagocytes immediately begin their important scavenger work, and generally with decided success when the number of dormant bacteria is small and their virulence moderate. Although sublimate in a concentration of 1 : 300,000 inhibits the growth of microörganisms, while carbolic acid requires a strength of 1 : 850 to accomplish the same, the last antiseptic is preferable for the reasons above given.

In the meantime carbolic acid possesses important disadvantages. Many surgeons can not use it, because it causes annoying eczemas or in any event dry and chapped hands and anesthesia. Carbolic acid as an application on the skin, mucous membranes or on wounds is furthermore an exceedingly dangerous agent to the organism, and cases of poisoning have been both numerous and fatal, and often compromising. For these reasons I never could persuade myself to employ this chemical in disinfection of the skin, but have cast about for an agent which has the advantages but not the drawbacks of carbolic acid. Such an agent prabably does not exist. I have provisionally availed myself of lysol, which possesses its good qualities in the same or higher degree and its disadvantages in less. Lysol is saponified phenol; it is derived from cresol, a coal tar product of superior antiseptic power to carbolic acid, by the action of nascent soap. It is a good antiseptic in the strength of 1 to 3 per cent. Lysol is viscid, brown and strongly alkalin. It dissolves very readily in water, which carbolic acid does not do; the solution foams like soapwater, penetrates the skin easier than carbolic acid, makes the skin soft and pliable, burns a little and causes after a short time a feeling of numbness. Its toxic properties are not as marked as carbolic acid. It is on the whole eminently qualified for washing the hands and site of operation, whether the skin is broken or not, while continued wet applications have to some extent the disadvantages of carbolic acid with regard to burning and the production of eczema, for which reason I still prefer weak solutions of sublimate for this purpose.

I believe that military surgeons should adopt this practical, inexpensive and good preparation, which is at the same time both a soap and an antiseptic, as the disinfection of hands and field of operation according to Fürbringer's method (warm water, soap, brush, nail cleaner, alcohol, sublimate and sterile towel) always will be impracticable in actual service.

The disinfection, which I will take the liberty to recommend in military service as well as in civil, where circumstances admit of it, is as follows: Brush the hands intelligently with a clean, stiff brush in a quart of hot water, to which has been added by guess a tablespoonful of lysol; then cleanse the finger nails; cleanse anew the hands with a fresh solution of lysol and another clean brush, dry them with a sterile towel and rub thereafter the hands thoroughly with lanolin from the collapsible tub; remove the excess of lanolin. In the absence of hot water use cold water for a longer time; in the absence of any water simply rub the hands with lanolin, which, under all circumstances, is better than nothing. The field of operation is treated in the same way. It is within the possibility, that it might be of some value to render the lanolin antiseptic with lysol, where we are prevented from using both separately. As is well known the antiseptics certainly lose a good deal of their value by being mixed with fatty substances—considerably less, however, in lanolin. In the meantime I am not so far advanced in my experiments with antiseptic lanolin that I feel justified in expressing myself concerning this for the time being.

THERMIC DISINFECTION.

While cold is not able to destroy microörganisms, but simply inhibits their growth, heat on the contrary is the best germicide. Practical application in surgery finds heat in the form of hot air, boiling water and steam. Hot air is a much more powerful disinfectant than chemicals, but it is considerably inferior to boiling water and steam. Koch and Wolfhügel have found that non-sporebearing bacteria are destroyed in the course of one hour and a half in hot air at a temperature of 212 degrees F., while spores require a temperature of at least 284 degrees F. for three hours for their destruction. To this disproportionately long time dry heat posessed but little penetrative power. It takes a very variable and at any rate a very long time to bring the temperature up to the desired height in the articles to be sterilized, while as a matter of experience it is very difficult, not to say impossible, to obtain a uniform temperature in dry heat sterilizers, for which reason the thermometer is not a safe guide. When to this is added, that the dressings suffer considerably in continued and high temperature, that the instruments rust and lose in temperature and edge, and that these sterilizers are both cumbersome and expensive, it is no exaggeration to maintain that sterilizers for hot air alone only should be of historic interest in surgery. However, there is one important material which seems to be most properly adapted for sterilization by hot air, viz., catgut, which as is known neither stands boiling water nor steam, and whose sterilization by chemical means so often has proved to be unsatisfactory, not to mention the long time required. As catgut, because of its absorbability more and more gains ground *pari passu* with the perfection of its sterilization, both as a suturing and ligating material, and as I have long been of the decided opinion that the surgeon himself shall undertake or in any case control his asepsis, I have devised the sterilizer, which I later will demonstrate, to include also hot air.

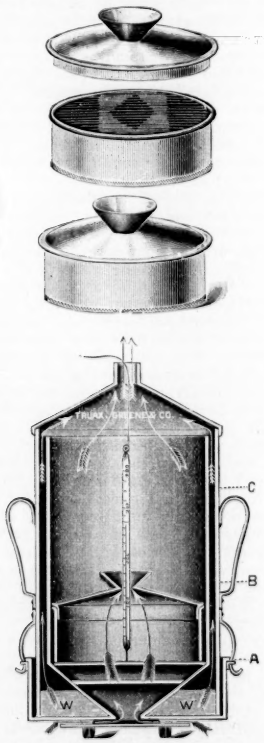
so that it can be utilized for catgut, which, so far as I can see, ought to have quite a future in military surgery for the reason that it can be at hand in a very convenient form. Benckisser deserves the credit of having conceived the happy idea of sterilizing catgut by dry heat in double, hermetically sealed envelopes—one within the other. Since microörganisms can not penetrate dry paper, the catgut will remain sterile indefinitely, if the envelopes are kept dry. This is indeed convenient. In this way we can carry sterile catgut in our pockets; when it is to be used, an assistant tears the outer envelope, which is infected on its outer side, while the surgeon himself or his first assistant removes and tears the inner, sterile envelope, which contains the catgut. Benckisser's idea has impressed me so favorably that I long ago adopted it for all the catgut I employ in my surgical practice, but with such modifications that I shall take the liberty to describe my procedure *in extenso*.

The raw catgut, which must be of prime quality in order to retain the necessary strength after the exposure to a prolonged and high temperature, is simply cut without special preparation of the hands into suitable lengths. The original bundle is divided so many times that each individual string measures respectively twenty or forty inches—two convenient lengths for practical use. Each of these strings is wound around two fingers in a coil, which then is wrapped up in wax paper, and since the mercantile article is very thin and easily perforated by the free ends of the coil, the wax paper is doubled, whereupon the whole is placed in a small envelope, which can be hermetically sealed and upon which is marked the length and size. The catgut is placed as nearly as possible in the middle of the envelope, which is now ready for sterilization. When the required amount of envelopes is made up they are arranged in a specially constructed metal box whose bottom is perforated and whose cover is provided with a small funnel to easily admit the thermometer to the interior of the box (see illustration). The envelopes are set up edgewise and must not be packed more tightly than will admit of free space between each one to allow the free circulation of the hot air. According to the thickness of the envelope, which depends upon the size and length of the gut, the box will receive from 150 to 200. The catgut box is now placed in the sterilizer; the pan is filled with cold water; the hood is applied without the cork; a thermometer, which registers up to 400 degrees F., and short enough to be completely hidden inside the apparatus, is slipped in so that the bulb rests upon the upper edge of the envelopes. The sterilizer is now put over the burner. For the sterilization of catgut it is important to employ a burner which can be regulated and which will not soot, since the last interferes with the raising of the temperature. We must use either a good gasolin or a gas burner, preferably with two regulating cocks. We begin with a very small flame, increasing it hour by hour, until the temperature at the end of three or four hours is at the required point (about 284 degrees F.). When this temperature is reached it is continued for at least three consecutive hours, after which the flame is turned off and the catgut box removed after cooling. The whole procedure requires at least six hours, of which three are consumed in the gradual heating up. As the original quantity of water—about one gallon—does not suffice for so many hours' boiling, water must be added time after time. This takes place without interruption of the sterilization or name-worthy reduction of the temperature, as it is indifferent whether the water poured into the lip be warm or cold.

I have already mentioned that the thermometer must not extend beyond the apparatus. If it does some of the vapor will be condensed on its projecting end and run down along the thermometer to the bulb, which will be to some extent cooled and register falsely. A loop is to be fastened to the upper end of the thermometer to allow of, from time to time, its rising sufficient to read off and control the temperature. It is not difficult at all to keep the proper temperature, so much the more as it is not necessary, not even possible to retain the temperature at exactly 284 degrees F. It suffices that the temperature does not descend below 280 and preferably not above 300, as higher degrees will burn the catgut; still it can stand a short exposure to 320 without being destroyed. It is to be remembered that it takes time for dry heat to communicate its temperature to the envelopes and their contents and that this communication does not keep pace with the gradual rise in the temperature of the hot air. We must bear in mind the little penetrating power of hot air and that paper is a poor conductor of heat, consequently it is wise to continue the sterilization for fully four hours after the thermometer registers 284 degrees, to be sure that the envelopes have had the benefit of this temperature for at least three hours, the time required for the complete destruction of spores of anthrax. When the envelopes are removed after complete sterilization, we will observe that they have changed in color from white to yellow; that they are oily—especially pronounced immediately over the coil—and very slippery. The yellow color is most marked at the lower border of the envelopes; evidently the temperature has been greater at this location. This has also been the case, as is evidenced by a glance at the illustration below. In this apparatus the hot air enters from below; at the wire diaphragm, upon which the catgut box rests, the temperature is, with good flame, 300 to 320 degrees F.; the temperature sinks gradually higher up, so that it is only about 240 degrees in the upper part of the sterilizing chamber, because this is surrounded on all sides by steam at 212 degrees, which consequently lowers the much higher temperature of the hot air. It is only in the lower two or three inches of the sterilizing chamber, that the temperature can be raised to at least 284 degrees; this part is alone suitable for the scientific sterilization of catgut, for which reason the catgut box is made but two inches high and the envelopes a little less to allow for the flange of the cover. The bottom of the box is perforated to admit of the entrance of the hot air. The temperature is taken at the upper border of the envelopes to make sure that the whole envelope is exposed to a temperature of not less than 284 degrees. There is as a rule about 20 degrees difference between the superior and inferior border of the envelopes; therefore, the color is more brown below, and for this reason I take the simple precaution to place the coil in the middle of the envelope to insure against burning and to secure the most possibly uniform temperature. After a few trials of the apparatus and a little experience in packing the envelopes uniformly, it is hardly necessary to observe the thermometer, because we know how wide open to leave the regulating cocks to obtain the desired tempera-

ture; patent gas regulators are superfluous. In order to provide for free circulation of hot air between the individual envelopes, especially at the location of the coils, arrange according to the illustration.

Cultures from catgut sterilized as above have without exception been found surgically sterile. Even the virulent spores of anthrax are destroyed, as is evidenced by the tubes here exhibited, while the pyogenic bacteria have succumbed long before—212 degrees F. for one hour and a half being sufficient, as stated above and verified by numerous cultures of my own. However, bacteriologically sterile catgut is not always achieved. At times colonies of hay bacilli and their spores are encountered. Happily these microörganisms are non-pathogenic and their destruction entails



generally also the destruction of the catgut. If you will kindly open some of these envelopes, which I sterilized a few days ago, you will be surprised to find that the individual strands apparently have lost nothing in strength from the high and continued temperature. Reverdin, who claims the honor of having been the first to suggest dry heat as the safest disinfectant for catgut, is of the opinion that the reason why it so often became brittle in dry heat was owing to its being burnt in its own fat. This is not my experience. At times I do find, it is true, notable variation in strength, not in the same, but in different boxes of catgut, but this can impossibly be ascribed to the fat, since the temperature has been the same in all. I believe that which Benckisser to my knowledge first called attention to and which Reverdin also in his last book admits is important, that it is the water contained in the catgut which is the determining factor. If the catgut is heated too quickly it will literally be boiled in its own water, and catgut does not stand boiling in water. The heating must be slow and gradual, so that the catgut will be absolutely dried long before the boiling point is reached. This is undoubtedly the secret, and if this is strictly complied with we will invariably find as a result the catgut in prime condition as regards strength. If the catgut in spite of this proves brittle we must not seek the cause in the fat contained, but in the quality of the catgut. I use with great satisfaction imported German catgut, marked 00, 0, 1, 2, 3, etc., and I spare to the poor kangaroo his costly tendon.

Benckisser removes the fat from the catgut with ether; Reverdin employs catgut delivered fat-free from the factory; I, on the contrary, retain the fat and even envelope the catgut in wax-paper in order to add more to it. A part of the grease goes out into the envelope, but a good deal remains in the catgut itself. I do not remove the fat of the gut, because I have found, what any ordinary sound mind could have predicted: 1, that pure fat, heated to a temperature of 284 degrees Fahr., could not diminish the strength of the catgut either more or less than hot air of the same temperature. 2, the most important, that fat containing catgut is a much less favorable culture medium for all pathogenic microörganisms than fat-free; and 3, that fat containing catgut does not soften and become absorbed as quickly as the fat-free. Even surgically sterile catgut is not exempt from occasionally causing sepsis; this sounds paradoxical, but can occur, when sterile catgut is used, under circumstances which do not or can not insure perfect asepsis. An aseptic result demands not only sterile catgut but also, that everything brought in contact therewith be likewise sterile; hands, instruments, solutions, towels and last, but not least, the field of operation. Provided that catgut has not been infected in handling, but that the site of operation, where the catgut is to be used either as suture, ligature or both, is not aseptic, the catgut will form a good culture soil for the bacteria present, upon whose number and virulence the successive resistance of the fat, contained within the catgut, depends, leaving out of consideration the more or less effective phagocytosis, which is equivalent to the degree of vascularity of the tissues and of their integrity, together with the general condition of the patient. In the skin, which as already stated, only with great difficulty, if at all, can be rendered aseptic, sterile catgut therefore will likely produce stitch-abscesses. This applies especially where the skin is poor in blood vessels and under tension. We certainly can evade this complication by adopting Halsted's painless subcutaneous method of suturing, which commends itself as a timely procedure and whereby the bacteria of the skin and its adnexa are avoided. Those surgeons, who do not feel inclined to adopt this mode of suturing and who dread stitch-abscesses must consequently renounce the use of catgut as a skin-suture and reserve this ideal material for buried sutures and for ligatures, provided they, like myself any many others, are fully

convinced of its complete security for both purposes.

Were catgut rendered not only aseptic, but antiseptic, what would then be the result? Should we not expect, that such catgut would be a proper material for skin sutures? The answer has practically been given long ago. Catgut which has been sterilized by means of antiseptics—which is admitted can occur—will become in spite of this a favorable soil for bacteria present as soon as the chemical is absorbed and then sepsis will occur—an old experience! Chemicals have not up to date solved the question of the applicability of catgut in skin sutures.

(To be continued.)

TOXICITY IN HYSTERIA, EPILEPSY AND NEURASTHENIA—RELATIONS AND TREATMENT.

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Of the many causes of hysteria, epilepsy and neurasthenia one of the most frequent and important seems to me to be toxicity in some form. Yet it has heretofore received little attention as an etiologic factor in the induction of these affections, all of which may be regarded as diatheses of more or less profound nature. To the toxic element in these diseases I wish especially to draw your notice. The term toxicity should, however, be used in its broadest sense, namely, functional cellular perversion, causing or being caused by abnormal chemic reactions.

The ordinary forms of hysteria are certainly functional. I do not believe we shall ever discover pathologic alterations in the central nervous system, even of minute degree, upon which we may base those manifestations which we call hysteric. By this, however, we do not mean to assert that hysteria may not depend directly upon an organic lesion situated outside of the nervous system. It is the expression in many instances of perverted chemic action or of abnormal cellular activity within the nervous system itself. In other cases the disturbed function of other organs exerts an immediate, yet secondary influence upon the nerve cells, and induces very severe forms of hysteria. So, for instance, we find those suffering from intestinal, biliary and renal troubles, and from thyroid enlargements, presenting grave cases of this disease. We have in these instances, and they form a large proportion of the entire number, a state of veritable cellular intoxication. It matters not what the nature of the active poison may be, the ultimate change is similar and is probably always cellular and, moreover, temporarily toxic. It is not necessary to suppose that the change must be structural; it suffices to consider it chemic. How else can we explain the physiologic action of certain drugs upon the nervous system? And many drugs bring about a condition closely allied to the hysteric. That we do not know the exact manner of this action is due rather to our deficient knowledge of nerve chemistry, than to any undiscovered structural pathologic alterations. Other cases orginate from a third cause, shock, in a variety of forms. Here, again, we may assume that cellular perversion, dependent upon shock or injury, lies at the bottom of the hysteric state.

There are undoubtedly other causes of true hysteria, spurious forms simulating the real, which are born wholly of a morbid desire for sympathy and condolence. If we seek far enough we usually detect conditions in nearly all cases which point to some form of cellular malnutrition and abnormal nerve-cell activity. It is this point which I especially wish to emphasize, for only too often the physician fails in his treatment of these cases because he contents himself with the meager diagnosis of hysteria—and never attempts to discover any basis for his diagnosis.

In one direction this search for the causation of hysteria has led to extremes. I refer particularly to those who have taught that the genital organs of women are the main causes of hysteria and have performed grave operations to relieve the reflex affection, with very little benefit to their patients. Where uterus or ovaries are diseased they should, if necessary, be removed and doubtless when these pathologic organs have been taken from the system an improvement in the general nervous state often results. But the operation should be done because the organs are diseased, not because the sufferer may have concomitant hysteria. When these or any other organs are sound I doubt if their removal is ever justifiable.

It must not be inferred that there is not a reflex origin of certain nervous conditions. On the contrary, we meet with such an etiology very often, though perhaps not so frequently as some enthusiasts declare. Any diseased organ may become a source of reflex nerve irritation. But the genital organs are probably no more to be blamed than other organs, for instance, the stomach. We must not lose sight of the fact that the vast majority of women have some more or less severe genital trouble. This they may owe to their husbands or to the alleged advantages of civilization. It should, therefore, not be surprising to find that most of those afflicted with hysteria should be similarly affected. Men often suffer from the disease in its severest form. In fact, the masculine hysteric is usually more intractible than the feminine. Some of the worst cases I have seen have occurred in men. These facts art important and a recollection of them will sometimes materially alter seemingly grave situations. I have seen cases of absolute paralysis and mutism in male hysterics, where a diagnosis of organic lesion had been made. Hysteria is wont to be more stable in nature in masculine than in feminine subjects: it is one of the most characteristic features of the affection. The symptoms in women and girls often vary with considerable rapidity, whereas the opposite is common in men and boys. This peculiarity goes far to explain the symptomatology of the traumatic neuroses, so much more frequently met with in a stable form in men than in women.

Of the ordinary symptoms convulsions alone deserve special mention, and these we shall discuss in connection with those occurring in epilepsy. There is an intermediate state—hystero-epilepsy—which shows features of both affections, but this state also we may pass over without dwelling upon it particularly.

Epilepsy, like hysteria, may be regarded as a diathesis, but of a more profound nature. Here, again, I should make distintions of etiology similar to those of hysteria, but with this distinction, that in true epilepsy we find pathologic changes in the structure of the central nervous system. Aside from cases of so-

called Jacksonian epilepsy, where we have gross cortical, subcortical or extra-cerebral lesions, the changes ordinarily found are of a vascular nature. Heretofore no constant histologic cellular alterations have been found. Numerous minute hemorrhages scattered throughout the brain substance, notably in the cortical gray matter, have been almost invariably seen, but these should, I think, be regarded as the result of the changes in the walls of the blood-vessels. As I have recently pointed out[1] the walls of these structures are usually thickened and therefore less elastic than normal and very liable to rupture. The minute apoplexies should not be looked upon as the cause of the epileptic attacks. The changes in the vascular walls are produced by the action of some toxic agent which at the same time acts chemically upon the ganglionic cells of the cortex and causes the malady we term epilepsy. In many instances, perhaps in the majority of cases, we certainly have to deal with the effects of auto-intoxication. The periodic character of the disease is to me no insignificant proof of this view. Over a year ago I stated that I regarded many diseases of the nervous system, among them epilepsy, as of toxic origin. Recent researches support this opinion. The action of xanthin and paraxanthin, leucomaines of the uric acid group, when these substances are present in the blood in abnormal, though very minute quantities, lends distinct worth to the toxic theory of the etiology of true epilepsy. (Rachford, *New York Medical Record.*) The sequence of symptoms in the disease differs materially in various cases, though it occurs with peculiar constancy in individual instances. The seizures of any one given person are very much alike, from the aura or prodroma to the end of the entire attack. The intensity of the different paroxysms may vary considerably, from the mildest epileptiform warning to fatal coma. The attacks themselves may sometimes closely resemble severe hysteric seizures. There is, however, one fundamental difference between the convulsions of hysteria and epilepsy. The former are probably never dangerous and the patients seldom pass into an unconscious state; the latter may be very dangerous and even fatal, and loss of consciousness usually occurs. An hysteric patient never hurts herself and ordinarily falls in some convenient place. An epileptic, on the other hand, readily comes to grief.

The character of the muscular spasms deserves a concise consideration. As a rule those occurring in essential epilepsy follow in certain order in the different attacks of a given individual. This is especially true in cases of Jacksonian or cortical epilepsy, notably where the lesion is situated over or in the vicinity of the fissure of Rolando. The centers for the various muscular movements lie in this region in known positions, those for the leg being uppermost near the vortex. Next to these are the centers for the arm, the face and the tongue in the order named. If, therefore, convulsions occur they must follow in exact physiologic sequence. If the muscular twitchings begin in the leg, those of the arms must take place before the lower half of the face on the same side is affected. The spasms can not under such circumstances spare the arm or extend from the leg immediately to the face. The contractions of the tongue, if they be present, can not usually be seen, as the mouth is nearly always tightly closed. Such an exact sequence of the convulsive movements in hysteria seldom occurs. It will be noticed, therefore, that though the two diseases have some striking resemblances they really differ materially, and it will not usually prove difficult to separate the one from the other.

Fortunately neurasthenia is not often complicated by concurrent epilepsy or even by hysteria. This class of cases was long included among the hysteric affections. From these, however, they differ considerably, notably in that the latter are very much more frequent in the female sex, whereas neurasthenia is preëminently a disease of the male. Men who have led active business lives, who have consumed their stock of nervous and vital force rapidly, are commonly candidates for this trouble. Again others who have unceasingly applied themselves to mental overwork are attacked. Others again who have been long exposed to the influence of certain drugs, for example lead, mercury and nicotin, become afflicted. It is an important fact, however, that the majority of these patients are at the same time suffering from such chronic organic lesions as notoriously cause the formation of noxious metabolic substances, namely stomach, intestinal, liver and kidney troubles. In this affection once more we find ultimately cellular functional perversion brought on by a variety of factors. Yet the condition differs much from hysteria and epilepsy. In neurasthenia we have essentially a state of perverted cellular vitality, not only of the nervous system, but frequently also of the entire body. Energies long misapplied have finally induced a condition in which the vital forces themselves become misapplied. Neurasthenia resembles in many ways hypochondria, but the two are distinct. The latter is a functionally perverted state due to individual inherent characteristics; the former is a like condition of physiologic over-exertion in certain directions. The ultimate result may, however, be very similar.

I distinguish three degrees of neurasthenia, namely, 1, light grades or nervous weakness, 2, middle grades or nervous prostration, and 3, severe grades or nervous exhaustion. This distinction is purely arbitrary, but very convenient both for prognostic and therapeutic purposes. Under all three classes I again distinguish *a*, simple sexual neurasthenia, and *b*, spinal, respectively cerebro-spinal neurasthenia, of which the sexual weakness may be an essential part. Sexual neurasthenia is virtually an affection among men, and commonly of young men. Yet it is not necessarily the result of a vicious life. Under this class I do not include those cases which might be termed organic, inasmuch as they depend upon some peripheral lesion, usually of gonorrheal origin. Simple sexual neurasthenia is a purely psychic condition of functional inability to perform certain relations. It is usually the result of a failure or repeated failures in attempting to fulfill these relations. Upon this experience conviction of this inability to properly play the rôle of man becomes so firmly established that ultimately an actual, yet purely psychic, weakness in this respect develops. This condition may and often does remain stationary, but it may become intensified and lead to the severer form of spinal neurasthenia. On the other hand, sexual weakness usually forms an essential characteristic of all severer forms of spinal and cerebral neurasthenia. These severer forms often appeal to us as extremely serious conditions and, though lacking a fundamental nervous basis, they are

[1] JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION, July 20, 1895.

in reality grave, and necessitate the utmost care and skill in their management. As in hysteria and epilepsy, so here also, we need not speak of the manifestations of the various forms of neurasthenia, but rather proceed to discuss the treatment of these three conditions in a concise manner.

Of epilepsy I need say very little. In every case a possible toxic origin should be kept in mind and sought for. If found and successfully counteracted rapid amelioration in the patient's condition should and does result. My best experiences have certainly been in this direction. Otherwise the old routine treatment with the bromids, eventually combined with the iodids, or with borax, offers the surest means of rendering the attacks less frequent and severe. Complete cures under this therapy are certainly rare. Wherever a positive diagnosis of local cerebral trouble can be made, or even where reasonable suspicion of an organic focal lesion can be entertained, surgical methods are justifiable and should be practiced. It should be remembered that epilepsy is not infrequently of reflex nature, either from the eyes, nose or other organs, and abnormalities of these parts should be corrected. Scars or an adherent prepuce also sometimes induce epileptiform paroxysms, and where this is the case surgical methods are again in place. Unfortunately enthusiasts have brought the reflexes into disfavor.

The exact lines to be pursued in treating hysteria and neurasthenia depend largely upon individual cases and the conditions of life under which these cases exist. It is probably safe to adhere, if possible, to the rule, that change of scene and environment are beneficial to these two conditions. The complete loss of vital forces in many cases renders it often impossible to follow out this precept, until a considerable improvement has been attained. Whenever it can be done, however, an abrupt change in the habits of existence, a journey and especially a sea voyage for neurasthenics should be advised. By surrounding those afflicted by other persons and things and thereby diverting the remaining energies into other channels of thought and action much good may result. High mountain altitudes are beneficial in some cases, in others directly injurious. Ordinarily the sea coast is preferable as a place of sojourn.

Special attention should be given to the conservation of the vital forces still surviving, and the general state of mind and body tonus raised. By suggestive therapy excellent results may be achieved. If properly conducted and patiently carried out this method will often bring about an ultimate cure. It may be well to warn that this suggestive therapy is by no means identical with hypnotism. As a diagnostic aid hypnotism is often useful and may be conscientiously employed. As a therapeutic agent it may, and I think, usually does prove injurious. It has been of great value to me in individual cases, but my own experience, and that of many others, has not been of a character to warrant its continual and irrespective use in the treatment of any class of diseases. Suggestion in the waking state is equally efficacious, always possible and never harmful. It has been contended that it is difficult to hypnotize hysteric and nervous persons, but this is an error. As long as the attention can be concentrated these persons pass into the hypnotic state readily enough, with the ultimate result of further weakening an already shattered nervous vitality. It is therefore not untimely to protest against an indiscriminate use of this certainly powerful influence.

Naturally, whenever we suspect any etiologic factor as a cause of the nervous derangement we should seek to eradicate this factor. By so doing we strike at the root of the evil. In this connection it may be well to draw your notice once again to that which I have said concerning the possibility of auto-intoxication as productive of hysteria, epilepsy and neurasthenia. I have frequently found that persons, notably girls and young women, suffering from severe hysteric manifestations, were afflicted with chronic intestinal and renal disorders; they were essentially chlorotic and jaundiced, and very often were subjects of deranged thyroidal activity. By counteracting the malignant influence alone we may sometimes effect a cure. In addition to the above, and a proper use of medicinal remedies, a judicious bathing and open-air regimen ought to be carried out. My rule in regard to baths, both sponge and full, is to reduce gradually their temperature, but always to avoid the slightest degree of shock. A rational understanding of the effect of cold water is absolutely essential to the physician. Otherwise only poor results will attend his best efforts.

Only two other methods of treatment or, better said, parts of the general treatment need be mentioned, *i.e.*, electricity and the so-called rest cure. The electricity can be used in all of its forms. In my hands general faradization and the static current have been productive of the best results. Too strong currents should never be employed. In the severer forms of hysteria and neurasthenia, the rigid "rest cure" brings the speediest and surest relief. To be successful this should be absolutely carried out in all details, and should be extended over several weeks, and never attempted at the home of the patient. By isolating these cases completely from the other members of the family, by calling to our aid general faradic massage, by husbanding every atom of vital energy and by judicious feeding, even desperate cases improve rapidly and finally recover entirely. But, to repeat, it is absolutely essential that not one iota of nerve force be misspent nor a single portion of the remaining bodily strength be wasted.

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CRITICISM OF THE ANTITOXIN TREATMENT FROM A DIFFERENT STANDPOINT.

BY CARL STRUEH, M.D.

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The enthusiasm for the antitoxin treatment has at the present time become so common that one can hardly dare to give a pessimistic opinion if he does not want to run the risk of being called heretic or unscientific. Still I would like to explain in a few words the standpoint which I take as to the antitoxin treatment.

The statistics show the undeniable fact that since the introduction of the serum-therapy the mortality in diphtheria has decreased to about one-half of its former figure. Yet I think it wrong to ascribe this decrease in the mortality exclusively to the antitoxin treatment, but I take it for a very important causal factor that the serum-therapy, though absolutely not harmless, is less harmful than the drug treatment formerly used. The proof for this assertion is given us by those cases in which we apply antitoxin for

mere prophylactic purposes in healthy persons. The less severe disturbances which the antitoxin causes in our system escape our perception. Still we can say that visible changes in the subjective and objective condition of the person in the majority of cases do not set in; that, in other words, the condition of health of the person concerned is about the same after as before the injection of antitoxin.

Now we may give to a healthy child such drugs as calomel, potass. chlorate, etc., which we used under the old treatment, also a part of those drugs, as chlorid of iron, sublimate and the like, which we used for local application and which are also partly swallowed and absorbed into the child's system, and see if these drugs will produce as little consitutional disturbance as the antitoxin does. If this is not the case, if they are able to make the healthy child sick, is it not plausible then that they must have a more harmful effect on a child that is already diseased and who needs all its vital power to overcome the disease? Can we doubt that many a case that might have been cured otherwise must succumb to the twofold demand made by the overcoming of the disease and the elimination of the drugs the antibacillary and antitoxic effects of which are merely illusory; that, in other words, the mortality must be greater under the use of these drugs than without them?

I call attention to typhoid fever. At the time when we treated this disease with chemic antipyretics and internal antiseptics the mortality was 15 to 20 per cent. Had we been able to exchange this treatment for a serum-therapy, I am sure the mortality would have decreased to one-half also. By Brandt's method of hydriatic treatment it has decreased to less than 5 per cent, and this percentage will never be beaten by any other treatment, by no serum-therapy either. For typhoid the antitoxin treatment comes too late, and it would also have come too late for diphtheria, if we had exchanged the drug treatment directly for a hydriatic one.

What do we intend to do with hydrotherapy in typhoid? We do not expect it to have any influence on the process in the intestines, but we use it as a natural antipyretic and a tonic for the *vis medicatrix naturæ*, which alone can cure any pathologic disturbance in our body. Whether we have to deal with the typhoid bacillus, the diphtheria bacillus, or as the case may be, the pneumococcus; whether the lesion exists in the colon, the pharynx, or as the case may be, the lungs, is in my opinion entirely equal. Typhoid is so far the only disease in which we apply a physiologic treatment almost universally and with the best results. And it is inexplicable why the favorable therapeutic experience which we have gained in typhoid is so slowly extended to other diseases. Lately we have commenced to treat pneumonia with hydropathy, but why do we not use this treatment in every acute disease whatever, as in diphtheria? If I defend the hydriatic treatment of diphtheria, it is not only for theoretical reasons, but for practical experience and I do not doubt that a controlling treatment of diphtheria by hydropathy on the one, and by antitoxin on the other side, would certainly be in favor of the former. By the way, I want to call to mind the better convalescence, the *restitutio ad integrum* which we almost always find after the hydriatic treatment.

I need not say, that as long as the majority of the physicians neglect the use of hydro-therapy, the antitoxin treatment will hold the field for a long time, and as to the practical results we can be satisfied for the present, for we have made a good change anyhow, if we remember the old drug treatment (drug poisoning). Still we can be sure that the antitoxin treatment will some time disappear, and the physiologic treatment, the therapy of the future, will be applied by all physicians. Then we will treat diphtheria in a natural way, as we do typhoid now, and the mortality will be nearly as low as that we now have in typhoid; that means it will be considerably lower than it is under the antitoxin treatment.

The followers of serum-therapy maintain that on the application of antitoxin the whole course of the disease changes, that the temperature decreases, the general condition improves, the appetite gets better, the swelling of the glands diminishes, the membranes disappear in a comparatively short time, etc. Why, to decide this point, we have to wait for some more impartial opinions. In the first enthusiasm for a new treatment we are apt to see everything in a more brilliant light than we do after a thorough investigation. We have had this experience a thousand times with new drugs.

There is nothing so injurious to an impartial opinion as the fact that we are always apt to take the *post hoc* for the *propter hoc*. Every physician knows that there are a great many of cases which change for the better quite unexpectedly, and I am sure that this fact has a great deal to do with many a brilliant result of antitoxin treatment. An illustration of this opinion I lately received from a brother physician, an enthusiastic believer in serum-therapy. His 6-year-old boy became sick suddenly with high fever, swelling of the maxillary glands, difficulty in swallowing and thick coating of the tonsils. The doctor obtained some antitoxin late in the evening, but postponed the injection of it until the next morning, when it was no longer necessary, the boy being entirely well. The fever was gone, the maxillary glands were painless and had greatly decreased, and the membranes were almost gone. This case would have been taken as a convincing proof of the efficiency of the antitoxin, if it had been injected. Similar cases certainly are in the mind of every physician.

A fact that we also must not overlook, is that, as the antitoxin is said to manifest its main power in the beginning of the disease, there is many a simple inflammation of the pharynx taken for diphtheria and supposed to have been cut short as such. It is absolutely necessary that we form our opinion of the value of the antitoxin only from such cases as are diagnosed as diphtheria from a bacteriologic examination, which has not been the general custom so far. I do not know among the physicians I am acquainted with and who are enthusiastic followers of the serum-therapy, a single one who makes a bacteriologic examination in every case and with whom such an examination is not an exception. And I am certain almost every physician must admit the same of himself and his friends. So we can say that the great majority of those cases to which the present fame of antitoxin treatment is due, are such in which a bacteriologic examination has not been made.

But how can we swear to the efficiency of a remedy for diphtheria, if we do not know in every single case whether we have to deal with a case of diphtheria or with a simple catarrhal inflammation? We can not rely merely upon the clinical diagnosis, for

it is, for instance, almost impossible to diagnose a case of diphtheria in its beginning, at a time when the antitoxin is said to be especially efficient. That even advanced cases do not necessarily furnish the clinical symptoms, we see in membranous croup and in those cases in which a diphtheritic paralysis (for instance, of accommodation) occurs, and in which the patient hardly showed any symptoms indicating diphtheria.

The followers of the antitoxin treatment further say that since the introduction of this therapy, the mortality in children who were operated upon for croup has decreased. Even by this fact we must not be filled with enthusiasm too quickly. We know that most of the children affected with croup do not offer severe, but mild diphtheria, and that the dangerous character of croup merely consists of the localization of the membrane, the mechanical occlusion of the glottis. Most of these children are cheerful, have a good appetite, very little fever, only slightly swollen glands, almost no symptoms from the throat, and hardly offer the appearance of a sick child until the mechanical occlusion of the glottis and suffocation set in. If in such a case we provide the child with sufficient air, as we do by tracheotomy, and beside treat the child by a comparatively harmless method, as we do by the antitoxin treatment, it is not surprising that the results will be better than they were at the time when we used to injure the vital power of the child by drugs and when we exposed the child to vapor saturated with chemicals that, though not powerful enough to kill the bacillus, yet were strong enough to have a poisonous effect on the system and which prevented a sufficient supply of oxygen, so immensely important to the almost suffocated child.

As to those injections of antitoxin which are made for prophylactic purposes, we must admit that it is not the rule that from a child being sick with diphtheria the majority of the family becomes infected, at least this is not my experience. If we, therefore, apply antitoxin to every member of a family in which there is a case of diphtheria, we can wager ten to one, of course, that the result will be in favor of the antitoxin.

Whether my opinion which I have given in the foregoing treatise is wrong, or that of the followers of the serum-therapy is right, can not be decided upon, unless we use a little more logic in the investigation of the subject. The followers of the antitoxin treatment declare that it is necessary, in order to get those good results, not to combine any drug treatment, at least not to the extent as formerly used, with the application of antitoxin, and right there, it seems to me, is the root of the whole matter. I do not call it logical to ascribe the decrease in the mortality exclusively to the antitoxin treatment and not pay any attention to the possibility that the exclusion of the drug treatment might have something to do with it. This point ought to be investigated first, for we can not deny the fact that the animal serum is more related to us and less harmful to our system than the chemicals are, and it is logical that the exclusion of the greater evil must have a favorable effect on the mortality.

We know or assume that under the drug treatment also antitoxin was formed in the blood serum of the sick child. If we now would continue this drug treatment and increase the amount of antitoxin in the child's blood, by injecting animal antitoxin, and the mortality would decrease, then we could say that this decrease is merely due to the antitoxin injected, and nobody could deny this fact. If, however, the drugs interfere with the antitoxin, then we ought to find out first, by excluding the drugs, what mortality there would be if the system, in its fight against the diphtheria poison, had to rely exclusively upon the antitoxin that is formed in the diseased body. Only if we know this percentage of mortality, we can form a correct opinion of the animal antitoxin which we inject into the child. But as we might not like to treat a case of diphtheria by an indifferent treatment, we could easily follow the former way of investigation, and ascertain the mortality which we would have under a combined drug and antitoxin treatment. To exclude the more harmful drugs and substitute the less harmful antitoxin and to ascribe the favorable change in the mortality exclusively to the latter, is a logic that would not be admitted in any other science.

WHITHER ARE WE DRIFTING? INDICATIONS OF A DEGENERATE MATERIA MEDICA.

Read at the forty-fifth Annual Meeting of the Medical Society of the State of Pennsylvania, at Chambersburg, Pa., May 23, 1895.

BY H. A. ARNOLD, M.D.

ARDMORE, PA.

Medieval and ancient history tell us that in those periods of the world's history the practitioner of medicine covered up a vast amount of ignorance under the veil of secrecy and mysticism, in order that he might awe the superstitious and satisfy the incredulous. In those ages the alchemist sought the hidden things of nature, either from love of science or a desire to enrich himself by discovering a means of producing the precious metal. Those ages were followed by one of enlightenment, when rational medicine supplanted mysticism and the nobility of scientific attainment was wedded to philanthropic purposes. Physician, surgeon and chemist worked hand in hand, and surgery, materia medica and pharmacopœia teemed with the products of advanced thought, freely and voluntarily disseminated with no motive save the good of mankind in general, and the advancement of medical science in particular.

In these days practitioners of medicine were for the most part dignified, courteous gentlemen, whose intellectual attainments and excellent judgment awarded them a high place in the esteem of the community, seldom equaled by the clergy, and never by the legal profession. There are living illustrations of the truthfulness of this statement in the persons of some who are still identified with this society though past the three score and ten, or four score years allotted to man; and have we not been impressed with the accuracy of the statement when brought in contact with them?

Time effects many changes, and chemist and medical man have shared in the process of transformation. The product of the laboratory now receives an euphonious designation, is turned over to a number of experimenters, endorsed to order by them with undue haste, whereupon the "Chemical Company," burning with desire to confer manifold blessings upon suffering humanity, issues a very attractive pamphlet which glows with candor on one page and ambiguously obscure upon another, parades the names and string of titles of its stock list of product endorsers, and generously offers, post or express prepaid, samples as a bid for further endorsement. At

the same time they carefully refrain from revealing either the exact composition or method of production.

Take up almost any of the numerous "regular" medical journals and page after page is given up to the conspicuous notice of "antis" and "ines," until one turns away in disgust and wonders where the end will be. I have just opened a copy of a new claimant for a place in the field of medical literature on the ostensible grounds that it is "a condensed summary of the medical literature of the world," only to find that this four page paper has given up one entire page to a most brazen fraud.

The wholesale production of "favorite formulæ," "coal tar derivatives," "animal extracts," etc., has not resulted from honest beneficent motives, but rather in every instance are they the articles of commerce which are expected to enrich their producers, if only they can be extensively advertised with the proper endorsements.

There is one other very objectionable feature about this system of medicine making and advertising, and that is the means made use of to insure the success of the business venture. Short-sighted men are lured, weak men are cajoled and seekers after notoriety need no coaxing to endorse statements, verify results, praise merits and prognosticate a glorious future for the *latest* wonderful product, all of which is speedily brought to the notice of professional men, who are supposed to ever stand in an expectant attitude, waiting for a new Moses to lead them out of the wilderness of difficulty.

After due notice in the public press, with wise statements as to its mysterious nature, a curious public soon makes its acquaintance, and once in the possession of druggist and public, the manufacturer boldly advertises in street cars, pseudo-medical journals, daily papers, etc., taking care to state that it has received the endorsement of all *eminent* physicians and is used by the profession in general. I sometimes wonder how an honest physician must feel when he sees his name used to further the business of the A. B., X. Y. Z., or some other "Chemical Company," who having used the profession to introduce their wares to the public, have the unmitigated gall to continue to solicit medical recognition for their most ethical (?) product.

We used to speak of the "gullible public," and comment on the avidity with which they seized hold of much lauded proprietary medicines. Are we not in danger of falling into the same pit, and will not the shoe pinch when the world opens its eyes and sees the *gullible practitioner*, who has fallen from his high estate, and is only a salesman and distributor of proprietary articles and compounds made after formulæ either only partially revealed, or if followed would result in an entirely different product? Faith is commendable; yet, "Oh, ye of *little* faith" certainly does not apply to the medical profession of to-day. When we follow after strange gods we merit and receive disapproval and rebuke.

Realizing the fact that the study of materia medica has been made entirely unnecessary by reason of the enterprising spirit of the unselfish medicine makers, as well as by their profuse distribution of reliable information for the benefit of a profession which apparently is no longer capable of doing its own thinking, I feel almost inclined, in the interest of overworked medical students, to offer an expression of opinion something like the following:

Resolved, That it is the sentiment of this body that, inasmuch as the various manufacturers of medicine and medical compounds have assumed the role of experimentalists, and do generously supply the entire profession with literature voluminously describing each advance, as well as free samples for trial:

We do now suggest to the various medical colleges within this commonwealth that the time now occupied by students in acquiring a knowledge of drugs so soon to become obsolete by reason of the rapid progress in drug making, could be better employed in considering matters of etiquette, society manners and other means of enabling them to earn a genteel living by introducing to the public the valuable compounds brought to their notice by mail and through the columns of the medical journals.

Time does not admit of the elaboration of this subject in a paper limited to ten minutes, hence many phases of the matter can not even receive mention, nor is this the first time the subject has been presented to the State Society, and I hope it will continue to engage your attention until radical measures are resorted to, and this noble profession is wrested from the gigantic octopus that is rapidly enveloping it in its deadly grasp.

I well know that the way of the reformer is hard, and that he is cannonaded during his lifetime, even though he be canonized after death; yet in my obscurity I have no fear of the one, nor will my feeble efforts lead to the other.

Martin Martens, the author of that most enjoyable book, "God's Fool," says, "there was a man once, a satirist and he died. His friends gathered around him and they said indignantly, 'This man treated the whole round world as a football, and he kicked it at every opportunity.' The dead man opened one eye, 'But always toward the goal,' he said."

I sincerely hope sarcasm so imperfectly concealed and so defectively worded, may be forgiven when you fully understand the spirit of charity that prompts it, and the desire for advancement of all professional interests which actuates its author.

COMPLICATIONS IN CATARACT ARISING FROM DIABETES, ALBUMINURIA, LITHEMIA, ETC.

Read before the Mississippi Valley Medical Association, at Detroit, Mich., Sept. 5, 1895.

BY J. O. STILLSON, A.M., M.D.

INDIANAPOLIS, IND.

Whether there exists a positive relation between the development of senile cataract, and the presence of nephritic diseases such as albuminuria, diabetes, etc., seems to have as yet never been wholly proved to the general satisfaction of the profession at large. And yet, that there is at present, and, in fact, always has been an inclination to the belief that there is some such relation, if not positively of an etiologic character, at least of sufficient importance to seriously modify and complicate our therapeutics, there is probably remaining at present very little doubt. The well-known experiment of injecting sugar into the circulation of the frog, thereby causing the opacity of the crystalline lens which clears up again, slowly, when the animal is left immersed in water, may now be classed as one of the old-time experiments in physiology. This interesting phenomenon simply proved that when there was an excess of sugar in the frog's circulation, cataract developed; and inasmuch as the functional power of the frog's kidneys, compared with that of the skin is almost, one might say, trifling, we readily see why that, when the emunctories of the

skin are brought into active exercise by the immersing of the animal in water, the elimination from its skin is great enough, comparatively speaking, to produce a thousand-fold effect in liberating any deleterious substance from the circulation. However, this does not prove why the lens becomes opaque and how it clears itself, again resuming its former transparency. Our knowledge of the whole subject is yet so meager we are forced to admit that many factors in the problem remain yet to be worked out before a definite conclusion can be arrived at in reference to this important question.

Analogous to the phenomenon in the frog, we have the well-known condition in the human species called diabetic cataract. The writer well remembers among the earlier lessons which he received in ophthalmology, how he was taught to regard with suspicion, the presence of a cataract in a person of middle age, or early adult life, who showed the presence of sugar in the urine, and where no traumatic history could be made out to explain the development of cataract. These cases were always to be handled with gloves. The prognosis was never flattering; in fact, they were regarded as unfavorable cases to treat, because as a rule they are liable to have retinitis present, which is unfavorable to an operation, or choroiditis for the same reason, and consequently the risk of post-operative iritis becomes greatly increased; added to the fact that such a lens is far removed from the physiologic condition of simple opacity, if senility can be called physiologic, and it has taken upon itself the metamorphosis of catalytic degenerescence, not far from putrescence; so that the sepsis after such operations from auto-infection is not an impossibility by any means.

If man were plunged into the ocean, or if the eliminating power of his kidneys were augmented a thousand fold, still his diabetic cataract would never clear up, like the sugar cataract of the frog. Why? Because his condition is certainly now no longer a physiologic one. He has long since passed into the domain of pathologic degeneration. All the fibers and cells of his lens have virtually become broken down and separated from each other and the general circulation of the eye, and there encapsulated as it were, they remain as a foreign material, wholly offensive to the circulation.

It is not the purpose of this paper to prove or to disprove anything. It is easy to set up a theory of straw to be riddled with the bullets of adverse criticism; nor can we always depend upon statistics to come to our relief, when a proposition in medicine needs to be proved. There are always, however, certain fundamental facts, which crop out in the clinical study of every case which we can not ignore, however poorly we may explain. Whether arterio-sclerosis and atheroma start out as purely physiologic conditions, to be afterward changed into pathologic states, or whether the prior degeneration of some vital organ like the kidney or liver is necessary to bring about atheroma as a result, is probably easier answered than the query which underlies this paper. This, however, we do know, that whenever atheroma does exist in conjunction with such diseases, as nephritis, diabetes, albuminuria, etc., the senile changes which indicate the general breaking down of the system follow each other in more rapid succession than where organic diseases of the kidney or liver do not exist. Hence it is that a delicate and sensitive organ like the eye, would be less likely to escape. We therefore are not surprised at the appearance of an albuminous or serous retinitis, as one of the earlier, and sometimes even prodromatic indications of Bright's disease. It does not seem to the writer that we ought to be surprised when find as we do in many cases of cataract, not specially diabetic, the unmistakable evidences of renal disturbance; the presence of a certain quantity of albumin, and oftentimes, in specially nervous individuals, an increase in urea and more or less evidence of sugar in the urine.

L. Webster Fox (*Vide Ophthalmic Record*, June, 1894) says: "Whether an albuminuria *causes* cataract may be a matter of doubt, but one is struck with the frequent coincidence of albuminuria in cataractous patients. In order to explain this fact in cases of senile cataract, Michel says that it is essential to consider that cataract and albuminuria are the results of alterations produced simultaneously in the eyes and in the kidneys from the same general cause, arterio-sclerosis. This theory recalls, to a certain point, that of Sutton who considered that interstitial nephritis and hypertrophy of the left ventricle are both caused by an alteration of the vascular walls, arterio-fibrosis. Berger, Becker and the greater number of those who have made a special study of this question do not believe in the relation claimed by Deutschmann between cataract and nephritis."

Quoting from Risley, in his admirable remarks before the State Society of Pennsylvania, May, 1895: "The great liability of gouty and rheumatic persons to transient vaso-motor derangements, to persistent and recurring inflammation of the mucous membranes and fibrous tissues, and to changes in the vascular walls is too well known to need comment in this presence. When it is remembered that these structures are so uniformly represented, in most highly organized forms, in the eye and its appendages, it is not to be supposed that this important organ would escape the influence of the uric acid diathesis. Indeed clinical experience furnishes ample demonstration of its extreme liability to participation in this class of affections dependent upon this malady of nutrition. By way of illustration it is needful only to mention the fact that in the etiology of iritis, this diathesis stands second only to syphilis in its number of victims, while in stubbornness to treatment and tendency to recur it stands first." And again: "The high arterial tension, the hypertrophied left ventricle, the chronic nephritis, and contracted kidney, the rigid arterial wall becoming atheromatous, apoplexies, angina, etc., present a picture of serious diseases which unfortunately we are only too frequently called upon to witness. It can not be supposed that the ocular blood vessels would escape the disaster which has fallen so heavily upon the general blood vessel system. Indeed, when we are reminded that the nutrient coat of the eye—the choroid—is a meshwork of blood vessels ramifying through a loose connective tissue stroma, we are prepared to expect the clinical picture which is so frequently presented for study. Since the dioptric system of the eye enables the surgeon to study the intra-ocular tissues under an enlargement of about fourteen diameters, it affords a unique and favorable opportunity to study the pathologic changes going on in living structures. It is under these conditions he is permitted to observe the innumerable small apoplexies in hemorrhagic

retinitis, and in the latter stages of nephritis (morbus Brightii); in perivasculitis and hemorrhagic glaucoma; and the choroidal disease which so uniformly precedes incipient cataract and upon which the cataract depends. In all of these cases, the blood vessel change which has so seriously disturbed the nutrition of the eye, has for months or years been steadily progressing, *pari passu* with that going on in the general system. In the serious ocular disease we witness the final outcome under peculiar anatomic conditions, but at the same time are furnished a rational explanation of their fatal character, and the disappointing results of all forms of treatment in their later stages. It is not reasonable to expect brilliant results from surgical procedures in an organ where the source of repair is cut off by narrowed and diseased blood vessels. Some forms of corneal disease, acute glaucoma, especially hemorrhagic glaucoma, hemorrhagic retinitis, vitreous opacities, complicated cataracts, albuminuric retinitis, with chronic nephritis and perivasculitis, are forms of ocular diseases that should always lead to a careful analysis of general conditions and will usually be found to prove but one of many other groups of symptoms pointing to the general impairment of the vital functions."

Difference in belief by able investigators would seem to throw a cloud upon the title to the claim of those who follow Deutschmann, were it not for the fact that we have again as able authors as those mentioned, who have written forcibly upon the subject of "Non-Albuminuric Bright's Disease," so that the presence, and amount of albumin always in any given case, it would seem, does not really bear a constant ratio to the gravity of the symptoms or the stage of the disease by any means. We are all of us familiar with the fact that a wide variation in this regard is noticeable from day to day, even in the same patient. The writer is aquainted with the case of an estimable professional gentleman whose urine varies in the amount of albumin which it contains almost with his daily walk and conversation. He has had periodical attacks of phlyctena for years, at which times his urine is always bad and his temper and nervous system worse. Relaxation, relief from business, a trip and cessation from worry clears everything up, except his smoky lens, which, while they are not cataractous, bespeak that peculiar opaline tinge of beginning sclerosis which comes on so many years before the appearances of the "cataract nigra." The decrease in the aggregated amount of albumin present, as compared with former years, is, it seems to the writer, only a pathognomonic sign of the "small confracted kidney," and not any indication at all of his physical betterment. One might faithfully say to him that it is only a race between life and sight as to which will go first.

Dr. Jas. Wallace, Assistant Ophthalmic Surgeon to the Hospital of the University of Pennsylvania has, by means of photographic enlargements of the microscopic appearances of thin sections of crystalline lens, near the region of the attachment of the suspensory ligament, brought out the fact that with an amplification of three hundred diameters he has been able to demonstrate the existence of minute fibers, in every respect answering to nerve fibers, running somewhat like a spiral figure 8 in and around the peripheral lens fibers, inclosing the cortical cells and other similar bodies, which sometimes appear to be wandering cells, in a sort of embrace, which as it changes from time to time, assumes the appearance of peristalsis, thereby forcing along in the interfibrillar spaces these bodies, and keeping up a variable relation between the elements of the cortex and the fibers of the lens itself. These nerve fibers he is inclined to believe are directly in relation to the nerve fibers from the retina through the suspensory ligaments, and the zonula of Zinn. In this way he accounts for the rapid development of cataract, after the rupture of the zonula of Zinn without any injury to the lens. If these are nerve fibers, then they not only have to do with the physiologic action of the lens in its relaxation to light and accommodation, but they superintend and control the nourishment of the lens as well. The Doctor quoting from Richter's Organic Chemistry goes on to say that: "In the death of these, and other similar nerves, we have the development of a substance resembling *cholin* to which the name *neurin* has been given and which is very poisonous, having a very unstable formula, rapidly changing through a series of tri, tetra, penta and subsequent forms of methylamin, identical with *cadaverin*, *putrescin*, *saprin* and *mydatoxin*." A very pertinent remark closes this able article thus: "We notice cataract as a concomitant of diabetes, a disease in which gangrene of any part of the body is easily produced by a slight injury."

The most important point therefore, when it comes to the management of a case of cataract is the diagnosis. It is not enough to be able to recognize a grayish or pearly whiteness to the pupil, with a movable iris, and then come to the conclusion that the case is simply a senile cataract. Nor is it hardly justice to the patient or fair to the operator that none of the ophthalmoscopic details be made out during the earlier and incipient stages of cataract formation; the very time when all the important choroidal changes are liable to occur, and when they can with the greatest certainity be made out. Subjective evidence after maturity of the cataract, is of course in no case to be overlooked. The phosphenes, the qualitative and quantitative perception, the projection, etc., all these are important elements in the examination prior to the operation. But how much better it is when the operator has had several months or even a few years aquaintance with the case. So many little points which may be overlooked by the grneral practitioner, will have been from time to time made out; the condition of the inner tunics of the eye, the normal or abnormal condition of the vitreous, the sluggish or active condition of the iris, the susceptibility of the patient to atropin, or other drugs, the idiosyncrasies, whims, notions and temperament of the aged individual will have been learned, and all of those little peculiarities which go so far to make or mar our success, will have been taken into account, when the time comes to subject the patient to the trying ordeal of an operation. In those cases where a bladder derangement, a mild or a serious form of Bright's disease, a transient albuminuria from stasis in the general circulation, or some diabetic complication may exist, experience teaches us that some cases may so yield to proper treatment, diet, and regulation of the habits of life, as to make all the difference in the world in the final outcome of such an important and valuable operation as the removal of senile cataract.

245 N. Penn. Street.

CAN ANTITOXIN STATISTICS BE RELIED UPON?

BY GUSTAVUS BLECH, A.B., M.D.
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The many fiascoes in modern medicine have taught me a lesson, viz: Never to be the first and never to be the last one, to adopt a new remedy. Liberality is one of the first conditions for progress and success in medicine; conservatism, the preventative for poetic illusions and errors, undiscovered on account of the blinding effect of enthusiasm.

I have quietly watched the reports of cures of diphtheria with antitoxin, and have wondered how easy it is to catch the masses, even if one knows next to nothing about the *modus operandi* of a remedy. Beside, its origin and composition is mystery as yet, its preparation being controlled entirely by a few enterprising chemists. But neither this nor the fact that its introduction into the human system is apt cause a good many dangers like leucocythemia, shall be brought as an argument against its value; even the fact, that a good many eminent and thoroughly reliable physicians have reported their experiments with it as failures shall not be mentioned, and only one modest question shall be asked: Can antitoxin statistics be relied upon? I dare answer no, not always. I do not doubt for one moment the honesty of the reporters and their noble intentions; for the sake of the honor of profession, I will say that "figures will not lie," but I can not help assert that "figures will." The fact is, that every case reported as diphtheria, is indeed, not always true diphtheria. In some cases the microscopic examination alone was sufficient for a diagnosis, and that was false. In other cases the physical signs, the clinical picture was the medium, and that was false also. Both together, microscope and thermometer, eye and hand, must be employed to obtain a correct diagnosis.

Diphtheria, true diphtheria in spite of horse, jackass or any other quadruped's serum, is a grave, constitutional disease, the prognosis of which is always doubtful. It is exaggerated when one of my friends asserts, that he makes a diagnosis of true diphtheria post-mortem only; but there is some truth in that intended joke. There are plenty of poor children running around the streets with sore throats, follicular tonsillitis, rhinitis fibrinosa and never take a drop of medicine and get well. And in some of these a physician is called in, and a few hours later, the health inspector is placarding the house. If, by chance, the parents are smart enough to call in a more experienced physician, off goes the red sign. I had quite a number of such cases in my practice, but in one of my last ones, I had an encounter with our local board of health, which ended in my victory. The case I refer to is that of a little boy R. S., aged 4 years. He was taken sick with sore throat and nose, the latter bleeding on touch, membranes being expelled on sneezing. A reputable physician was called who pronounced it diphtheria. He sent a culture to the local board of health where Klebs-Loeffler bacilli were found. For some unknown reason to me, the parents discharged the physician and called me in to attend the case. I made a careful examination of the nose and throat found a somewhat accelerated pulse and a temperature below 100 degrees F. The boy ran from one room to another, and would not agree to be confined to bed. While the mucous membrane appeared to be, on the first look, diphtheria, a closer examination revealed the double malady of follicular tonsillitis and rhinitis fibrinosa. Both affections simulate diphtheria almost to delusion. The clinical picture of a grave constitutional disease, high fever, etc., which symptoms are a *conditio sine qua non* for a diagnosis of true diphtheria, were absent. On the other hand some authors have lately classified rhinitis fibrinosa with diphtheria, but the best authorities in the old and the new world strongly object to such classification. The argument, that if the Klebs-Loeffler bacillus be found, the case must necessarily be one of true diphtheria, does not always hold good, as Baginsky and others have found the same bacillus in different forms of rhinitis and pharyngitis. While I must admit, that not every case of diphtheria is associated with a high temperature, constitutional depression, etc., such is the rule without any exception in nasal diphtheria. After nose and throat have been sprayed with hydrozone there could be found no microbe in the culture taken the other day.

The number of cases of this kind which I have successfully treated approaches closely to one hundred. If, according to the Board of Health of New York, Chicago and other institutions, they ought to be styled diphtheria, well then, what is the use of injecting blood serum taken from some animal? We have in hydrozone (30 volumes aqueous solution of anhydrous peroxid of hydrogen) a remedy which not only kills instantaneously the Loeffler bacilli, but also changes chemically the nature of the soil in which their spores can develop. Its deadly action is limited to vegetable cells (pathogenic germs) and it is the most powerful stimulant to healthy granulations, having no injurious action upon healthy animal cells. In fact, my experiment taught me that hydrozone is a safe and most reliable remedy to use in the treatment of diphtheria. On the contrary, I will say; How can we rely upon antitoxin?

203 E. Columbia Street.

A CASE OF STONE IN THE KIDNEY—NEPHROLITHOTOMY—RECOVERY.

BY W. D. HAMILTON, M.D.
COLUMBUS, OHIO.

Since Dr. Morris, of Middlesex Hospital, elaborated the operation for the removal of a stone from the kidney, the procedure has been frequently and successfully employed. The diagnosis of that condition is often difficult. In a sweeping way it might be stated that the inconstancy of the symptoms has prevented precision in the recognition and location of the disease. Again, other pathologic renal affections have shown symptoms suggestive of stone in that organ. Repeated attacks of renal colic, blood and pus in the urine, with the occasional passage of sabulous matter per urethram are strongly suggestive of it. Jordan Lloyd's valuable test led the writer to the diagnosis of stone in the kidney in the case about to be narrated. The hypothesis of renal calculus was offered, however, with mental reservations; for one surgeon, Dr. Jacobson, of Guy's, has reported not less than twenty-five exploratory lumbar incisions, where the symptoms of stone having been present some other condition was found. Early tuberculosis of the kidney, malignant disease involving the renal substance,

and the uric acid diathesis were the chief sources of error.

The inadequacy of puncturing the organ, and even its thorough palpation as final tests of the presence or absence of stone may be shown by the experience of Morris. The coterie of so-called stone symptoms was typical in a case in charge of this capable surgeon. Exploration through a lumbar cut, needling and renal incision brought negative results! The patient survived the operation. The symptoms recurred and we are compelled to admire the courage of Dr. Morris who removed the suspected kidney by the lumbar route. He could feel with the fingers no induration in its substance, when after nephrectomy the specimen lay before him. After incising it at several points he finally found, however, a stone of some size embedded in the renal tissue. The patient got well. Dr. Howard Kelley's recent article in the *News* will probably teach us much by the use of instruments of precision; for catherization of the ureters, perfected as he states, will show us at least the kind of work done by either kidney, The patient, Mr. A., æt. 49, a merchant from Newark, Ohio, was brought to the writer by Dr. Notring, of that place. He had been an invalid for three years. His appearance was that of a man accustomed to great suffering; he walked in such a way as to favor the left side; he was badly stooped, and the concavity of the bend of his body was to the front and left. His side having been exposed, he was given a sharp punch in the lame loin, the thumb being forced in the direction of the kidney. He complained that he felt as if a sword had been stuck into him. Jordan Lloyd looks upon a statement of this kind by the patient, after receiving such a thrust, as being strongly suggestive of the presence of renal calculus. A uranalysis at the time elicited the following facts: Sp. gr., 1012; reaction acid; phosphates present; no casts.

About forty attacks of renal colic had occurred within the three years of invalidism preceding his visit. Each meant a week's illness in bed. Pain began commonly in the night, starting in the left loin. A so-called swelling showed itself in that region during these seizures and disappeared after them. More or less complete anuria accompanied this intumescence, and was followed by a copious discharge of urine each time. Increasing intensity of this loin-ache with frequent and painful dribbling acts of urination, were invariable accompaniments of these paroxysms. The free administration of morphia was necessary during them. Neither pus nor blood nor sabulous matter in the urine was ever observed by the patient or the attending physician. To make things more obscure, in a violent lifting effort, made about the time that his illness began, a left inguinal hernia was produced. He naturally attributed much of his discomfort to this fact. He was told that he had a stone in the left kidney. An operation was performed at his home on Aug. 4., 1895. The usual preparation was employed. Strychnia was given beforehand in thirtieth grain doses for a few days, for its stimulant and tonic effect; while the parts were cleansed and suitably prepared to minimize the risk of sepsis; ether narcosis; right lateral position; a hard pillow was placed beneath the right loin, so that the left costo-iliac space was thus put on the stretch and increased. A four-inch oblique incision was made, avoiding the pleura above and peritoneum to the ventral side. The kidney was readily exposed; the finger was passed about the organ to separate the fatty capsule. On palpating its posterior surface toward the hilum a hard mass could be felt in the pelvis, which it well-nigh filled. Invaluable aid was rendered by the careful management of the anesthetic by Dr. Notring and by the strong upward traction of the ribs by Dr. Spear, so that the kidney could be brought well into the parietal opening. A probe was carried into the more accessible lower segment of the cortex, radially toward the pelvis, while the organ was steadied by the thumb and fingers. A stone was felt. The instrument in place served as a guide to the guarded bistoury with which the wound was enlarged; while a pair of angular Wells' forceps facilitated extraction of the stone. A drain was inserted into the loin; no vessels were ligated. Some shock supervened, but disappeared, however, within three hours. A few silk stitches were inserted. Some small sabulous fragments were discharged through the natural passages in the next few days. For a fortnight, urine was somewhat bloody, and afterward became cloudy.

Profiting by a previous experience in which after crushing a vesical calculus of the uric acid variety, the frequent voiding of cloudy urine had been a source of anxiety to the patient, the very free drinking of lithia water was advised and the urine became clear. He had quite recovered within a month so as to be able to pursue his occupation. The stone, a uric acid concretion, weighed 73.5 grs. It occupied the pelvis of the kidney which it almost filled, while the upper part of it lay embedded in the renal tissue. It might be well in closing to allude to the striking and misleading facts of the case, viz.: the absence of pus and blood and calcareous matter in the urine. He was at times, no doubt, a sufferer from acute hydro-nephrosis, as his history indicated.

CLINICAL LECTURE.

Extract from of a Clinical Lecture Delivered before the Senior Students at the Wisconsin College of Physicians and Surgeons.

BY JAMES A. BACH, M.D.,
PROFESSOR OF OPHTHALMOLOGY AND OTOLOGY.
MILWAUKEE, WIS.

GENTLEMEN:—Our first patient to-day is one of unusual interest. This young lady, as she tells us, about three years ago had the misfortune to receive a slight injury of her right eye, which injury was followed by deep infection, producing a plastic iridocyclitis. In due course of time the fellow eye became affected with a sympathetic inflammation, which practically amounted to an extension of the infection through the optic nerve sheaths, leading to similar results, *i.e.*, a plastic inflammation of the uveal tract with extensive adhesions. The inflammatory process in both eyes has now come to a standstill, with the result that the girl has simply a perception of light left.

Covering one eye and moving this light across different parts of the visual field you will notice that she readily locates the light correctly; in other words, her light projection is good, showing that the perceptive organs are, to say the least, partially intact in every portion of the field. The readiness with which she locates this light, although only a very small amount can pass into the interior of her eye, owing to these dense plastic exudates in the pupillary field, gives us a reasonable assurance that if we can suc-

cessfully remove these dense obstructions to the light we may gain some very serviceable vision for this young lady. She has everything to gain and practically nothing to lose.

Before attempting to do this operation I should like to call your attention to some instructive features in this case. In the first place, by looking closely at the eyes with the assistance of oblique illumination you will observe that the anterior chamber is perfectly absent; the iris lying immediately behind the cornea conforming itself perfectly to the curvature of the cornea. A condition similar to this is often found after a neglected iritis with complete posterior synechiæ, only that in these cases the iris does not adapt itself to the cornea, but bulges forward in the middle and is held down at the pupillary margins by adhesions, producing what is known as iris bombé. This bulging is produced by the filling in of aqueous humor in the posterior chamber, where it is chiefly secreted, which, however, can not find its way forward into the anterior chamber owing to the pupillary adhesions cutting off the communication between the chambers. In this case before you there is no bulging present, because there is no aqueous humor in the posterior chamber, the organs for its production having evidently been destroyed during the process of this deep and severe inflammation and adhesions, which is not the case when the inflammation is confined, or chiefly so, to the iris alone. These eyes evidently have lost their aqueous humor and with it the power to reproduce the same. As a rule, eyes of this kind experience a decided fluctuation in their tension. At about the time of the inflammation, owing to insufficiency of elimination of the internal fluids, the tension may rise very materially and may become T = + 2. The use of atropin in this stage is often not permissible, owing to this tendency. After the subsidence of this inflammation, the insufficiency of internal secretion of fluid, together with a gradual degeneration and shrinking of the contents of the globe, produced by the cutting off of the proper nutrition to these non-vascular structures, will gradually allow a decline in tension which often goes so far as to result in atrophy of the eyeball, known as phthisis bulbi. The tension of these eyes is as yet but very slightly reduced. If you will again look at the eyes under illumination you will observe the pupillary field to be very small, and instead of black as it ordinarily is, it is a yellowish white. This is a dense plastic exudate that has been thrown out during the process of inflammation and has become organized. But very little light can penetrate it. The iris looks slightly stretched and thinned; it has, however, not lost as much of its luster as one often finds in these cases.

We will now thoroughly cocainize this eye and proceed to make a large iridectomy. We will, no doubt, find that the whole of the iris has become adherent to the lens so that after the iridectomy the endothelial pigment layer of the iris will remain adherent to the anterior capsule of the lens, necessitating the removal of the lens as well. These lenses, owing to the insufficient nutrition are cataractous, as a rule. As I now enter my knife at the limbus and penetrate the cornea, if you will watch closely, you will observe that it at once impinges upon the iris, but by careful manipulation I succeed, as you see, to make my corneal section, although too small for our purpose. I will now take these delicate scissors and on either side enlarge my incision to sufficiency. As I grasp the iris with my forceps, I can feel distinctly its adherence to the lens capsule, and drawing a portion of it out it is snipped off. As anticipated, the pigment layer still rests on the lens. I now pass the cystotome into the anterior chamber and tear the capsule of the lens, which being completed the lens presents itself and is delivered without any difficulty. As you see, the patient is overjoyed at the fact of again receiving sufficient light to perceive objects. A similar case was operated at this clinic last year with a very satisfactory result. A fact that makes this case of special interest is that she has been refused operative interference from a number of oculists and she will indeed have occasion to feel grateful should the results prove such as we now have every reason to believe that they will be. It is very important in this class of cases not to operate while there are still active inflammatory symptoms present, because you are very liable to again lose through further plastic exudates the pupillary freedom gained by the operation.

Case 2.—This old gentleman, while a soldier in our late war, contracted trachoma, and has ever since been troubled with this unpleasant disease, not having received any special treatment for the same. Not only are his lids deeply infiltrated with the products of this disease, but it seems, on close examination, that the iris and other internal structures of the eye ball have suffered in consequence. He now comes to us with double senile cataract, which are mature. Under these conditions it always is a grave undertaking to open the eye ball, especially where the interference of the internal delicate structures is as great as becomes necessary during the removal of a cataract. The chances for infection become a serious consideration. Although he has been under treatment for his granulations for some time now, yet the conjunctival sac is still not in a sufficiently healthy condition to justify subjecting this man to the operation of extraction. In these cases it is a good plan and one that I always pursue, to divide the operation into two parts and in that manner lessen very materially the chances for infection. By making a preliminary iridectomy to-day only, the chances for infection are not great and in the course of a few weeks, having received more treatment for the trachoma, we can with reasonable safety remove the lens. Any unhealthy condition of the conjunctival sac where this can be done ought to always be remedied before making the operation for cataract, otherwise we may expect from time to time to lose eyes from infections. I believe it is chiefly owing to the great care I take in preparing my cataract patients that I have not sustained a single loss of an eye through infection after cataract extraction; my success has been uniform.

Privilege not Waived.—In the case of Barker v. Cunard Steamship Co., decided by the general term of the supreme court of New York, Dec. 18, 1895, the court holds that it was not error to refuse to permit the defendant to prove by a certain physician the condition of the plaintiff when he entered a hospital, and the statements made by him in respect to the previous condition of his health. The knowledge of this witness was acquired from an inspection of and conversation with the plaintiff while the relation of physician and patient existed between them, and was privileged. This privilege, the court declares, was not waived by the plaintiff's having called other physicians to testify to his condition anterior and subsequent to the time he was in the hospital.

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SATURDAY, JANUARY 25, 1896.

MEDICAL EDUCATION IN THE UNITED STATES IN 1893.

The advance sheets of the report of Bureau of Education for 1893, just at hand, are full of most valuable information. This is an unusually bulky report. It contains all of the educational work presented at the world's congresses at Chicago. The discussion of these papers must be left to educational and literary journals and the present notice confined to the statistic material relating to medical schools. It is impossible to overlook the fact that this report is unusually incomplete in its treatment of medical education. The fact that nearly all medical schools are private schools may account for the reluctance of the Bureau in making full financial and other statistic reports of their condition and progress. The schools of theology are also private and yet they are much more fully reported. Taken as a whole, this report prepared by A. ERSKIN MILLER, will be found very useful and encouraging. The strong and certain drift to the four-year course is manifest. There is a gradual improvement in the material equipment in nearly all medical schools and a tendency toward enlarged, even bulky faculties. The clinical and laboratory facilities seem to be improving; and better than all, the requirements for admission are steadily advancing. The report should give great credit to the various State examining boards and to the Association of American Medical Colleges for these improvements. The number of medical students enrolled has gradually increased from 12,238 in 1888-89 to 16,130 in 1892-93, while at the same time the percentage of the enrollment graduating has fallen from 27.1 to 24.9. Very few schools require study with a preceptor. Study of medicine in the United States has become study at the college and in the hospital. It means perhaps too exclusive study in the classroom, in the laboratory, at the clinic and in the post-mortem chamber. It can not be doubted that this too exclusive scholastic trend of medical education will produce more scholarly but perhaps less successful practitioners.

It is hard to understand the gradual and uniform decline in the number of college graduates who study medicine. It would be natural to expect an increase of college men in medicine with every improvement in medical teaching. But at Harvard, for example, where there has been a steady advance in all that can be called better medical education, the ratio of college graduates to the total enrollment has fallen from 54 per cent. in 1884 to 23 per cent. in 1893. It may be that the reputation which Harvard attained through the influence of the large ratio of college men led to an inundation of students without literary degrees, and a real or apparent falling off of the better educated men.

There were 132 medical schools in the United States in 1893. Of these 2 were preparatory, 94 regular, 16 "homeopathic," 10 "eclectic," 2 "physio-medical" and 8 graduate schools. The total enrollment of these colleges was 28,900 in the school year 1892–93, 16,130 were in the regular and 1,445 in the homeopathic schools. There were 827 women enrolled in the 36 regular schools admitting women, out of an enrollment of 1,302 in all schools of medicine. For comparison it is well to notice the fact that there were at this time 142 theological schools with 7,856 enrolled and 1,502 graduating students, a gradual increase of 1,000 students in five years. And again, there were 63 law schools with 6,776 enrolled and 2,400 graduating students, an increase of almost exactly 3,388 students in five years.

It is interesting to study the grouping of the enrollment in the regular schools. Of these 16,130 students, the north Atlantic States claim 5,182; the north central States 5,229; the south central States 3,048; the south Atlantic States 2,192; and the Pacific States 479. The schools of New York, Pennsylvania, Missouri, Illinois, Kentucky, Maryland and Tennessee claim respectively 2,287, 1,867, 1,394, 1,386, 1,342, 1,111 and 1,060.

During the year 1892–93 one school, the University of Pennsylvania, had more than 800 students; three schools, Jefferson, Bellevue and Rush, had more than 600 and less than 700 students; two schools had more than 500 and less than 600 students; four schools had more than 400 and less than 500 students; four schools had more than 300 and less than 400 students; twelve schools had more than 200 and less than 300 students; twenty-three schools had more than 100 and less than 200 students; and thirty-nine schools had less than 100 students.

The annual fees varied between $200 and $28, and the graduating or examining fee from $30 to $0. All the schools except a few in the South were three-year schools; a few in the North required four years. The value of the buildings and equipment varied in the several schools between $320,000 and $12,000. The number of full professors was never less than seven and sometimes as many as twenty-eight. While one school had two assistants, one had sixty-five such teachers.

There is no discussion in this report of the course of study in the various medical schools in the country, nor is there any adequate presentation of the work of the various examining bodies. No more valuable work could be done for medical education than the presentation of the courses of study and the methods of such schools as excel in the teaching of particular branches or in particular directions.

THE DIAGNOSIS AND TREATMENT OF PERFORATION OF ULCER OF THE STOMACH AND DUODENUM.

Among the more dangerous symptoms of gastric ulcer, perforation has attracted special attention. The diagnosis and the treatment of this condition are made the subject of a special study by BLUME,[1] the results of which merit the interest of medical men in general. Of late years surgeons have busied themselves with perforation-peritonitis and occasional successful operations for perforation of the stomach have been reported. It is consequently an opportune time to review the results of the methods of treatment hitherto in vogue and to make clear the diagnosis and prognosis of perforation of the stomach in order to estimate the probable chances of the success of the new treatment.

There are recorded cases of recovery after perforation of the stomach into the free abdominal cavity without operation. FENWICK[2] and LIEBERMEISTER[3] both describe such cases in some of which the correctness of the diagnosis was confirmed by post-mortem examination. The idea that extensive or diffuse perforative peritonitis need not always be a fatal disease has received support in some of the cases treated by operation. Diffuse purulent peritonitis has been cured by means of incision with, as well as without, efforts at disinfection of the peritoneum and even after complete suture of the incision without drainage.[4]

BLUME briefly reports sixteen instances of acute and subacute cases of perforation of the stomach treated without operation. These cases were from PROFESSOR TRIER'S division in the Kommune Hospital in Copenhagen. All the cases were examined after death. The seat of the perforation was in the anterior wall of the stomach in fourteen cases, in the anterior wall of the duodenum in two, and twice in the posterior wall of the stomach. In fourteen of the cases the post-mortem showed a diffuse peritonitis. In eight cases distinct evidences of an effort to close the perforation by means of adhesions were demonstrated. The length of time between the occurrence of the perforation and death varied from less than twenty-four hours to ten days, showing that in many cases there would have been time enough to consider the treatment and eventually operate.

BLUME then details four cases in which the symptoms after the perforation ran a more chronic course because peritoneal adhesions limited the peritonitis to the vicinity of the perforation. In none of these cases could a correct diagnosis have been made during life.

In a third series are reported seven cases of recovery from the perforation without operation. In all these cases the clinical data include observations that verify the diagnosis of gastric ulcer and records of the objective signs of the peritonitis whether it was diffuse or circumscribed; the latter was the case in four of the seven cases. Three of the patients entered the hospital forty-eight hours after the perforation, one thirty-six hours, one eighteen hours, and two less than twenty-four hours. The medicinal treatment consisted exclusively of opium and morphin. The feeding consisted in giving one teaspoonful of iced milk every fifteen minutes or one-half hour when the patient was awake, which quantity was gradually increased after a few days. Rectal feeding was not employed. The rationale for this somewhat unusual procedure was the fact that it is so important to keep up the normal functions of the stomach in order to hinder the regurgitation of intestinal contents into the stomach from which they would run out into the peritoneal cavity. BLUME lays great stress on this mode of feeding and the results seem to warrant his criticism of the remark of MIKULICZ[5] that "in perforative peritonitis the physician stands as an idle observer." The importance of reliable, trained nurses and of the suitable position of the patient is also emphasized.

BLUME then reviews seventeen cases from the literature, especially the English, in which operation was performed. The cases are arranged topographically into four groups: *a*, perforation in the region of the pylorus and duodenum, three cases with two deaths; *b*, perforations in the posterior wall, one case, recovery; *c*, perforations in the anterior wall, four cases with three deaths; *d*, perforations near the cardiac orifice, nine cases with six deaths. Some of the conclusions drawn from the histories of these cases are the following: The authors believe the operation should be made as soon as possible after

[1] Nordiskt Medicinskt Arkiv, 1896.
[2] The morbid states of the stomach and duodenum, London, 1868.
[3] Ueber das einfache Magengeschwür. Volkmann's Samml. No. 61, 1892.
[4] Kronlein, Arch. f. Chir. Bd. 33, S. 507.
[5] Volkmann's Sammlung, No. 262, 1885.

the perforation. Chloroform narcosis is said to be tolerated with astonishing ease. The incision is made in the median line between the xiphoid appendix and the umbilicus; transverse incisions may become necessary in order to reach the point of perforation. The treatment of the perforation itself is the essential act of the operation. The accessibility to the opening varies greatly in the four groups of cases; in group *a* the perforation is readily found; in group *b* access to the perforation is to be gained by cutting through the ligamentum gastro-colicum, when the stomach may be turned upward and the point of perforation brought into view. The perforation is easiest to find when situated on the anterior surface of the stomach (group *c*), but the acuteness of the angle formed by the costal arches may encroach seriously upon the room necessary to suture the opening; in the last group, *d*, the perforation is situated high up behind the chest wall and inasmuch as the stomach can not be pulled down the treatment of the opening in this group is very difficult and in three cases suturing of the perforation had to be abandoned as impossible, while in two cases the perforation was shut off from the rest of the peritoneal cavity by fastening the stomach to the abdominal wall, and in one a cure was obtained The treatment of the peritonitis consists of flushing with a warm, sterile, indifferent fluid or dry sponging with sterile gauze. Drainage of the peritoneal cavity was employed in nine of sixteen cases in which this point is referred to, three of the nine recovered; seven cases were treated without drainage and of these three got well.

Comparing the cases treated medically with those treated by surgical means, BLUME states that the results of the medical treatment as shown in the series of cases described by him are quite respectable, and that the possibility of a cure without operation has been definitely established, but nevertheless, the secure closure of the perforation by suture would hold out more definite hopes for recovery. In order to limit the operative interference to a minimum the diagnosis should be as certain as possible in order that the correct incision might be made at first and not, as has happened, between the umbilicus and the pubes, followed by exploration of the genitals, the cecum and the ileum before the attention was directed to the stomach where the opening was situated. And then BLUME advocates strongly the method of nourishment described in the operated cases as well. The idea that the stomach must be placed at absolute rest and remain empty is illusory. Unless the normal secretory functions are kept at work regurgitation of intestinal contents may follow.

THE Berlin Association for Int. Medicine has been devoting much time lately to the study of phenacetin poisoning.

PHYSICIANS AS LEGISLATORS.

The Cincinnati *Lancet and Clinic* announces, perhaps a little prematurely, that the grand old Commonwealth of Kentucky has honored itself by the selection of DR. GODFREY HUNTER to represent the State in the United States Senate for the next six years. Whether or not this is yet actually the fact, it is a truth that as physicians we may all feel a legitimate interest in seeing our profession represented in the highest legislative body of our nation. There seems to be an impression abroad in this country that physicians like clergymen are debarred from political honors and that there is no need of their advice in legislation. On the part of the profession itself there is perhaps too much of a notion that politics is a dirty business, unworthy of the attention of professional men, a sort of pitchy mess that can not be touched without defilement. That this is true to any extent is due to the fact that decent men keep clear of it and the condition will never be improved by keeping up and acting upon the prejudice. There is no class of men better qualified to purify politics than honorable physicians, who preserve the high ethical standards of their profession. To say that they will be injured by the associations or that the profession will be degraded by its members taking interest in public affairs, is to state what is not at all a necessary truth; the fact is that those who can be thus hurt are already past the danger point, and the profession is already sufficiently degraded by those who have aided in making too many of our public charities to a large extent mere political machines. What is needed is the entrance of high grade medical men into our legislatures and Congress, and their aid and advice in the framing of our laws. The public welfare is the aim of all legislation, and among its first essentials if indeed if it is not the first, is the public health. Legislators more than any other public funtionaries need enlightenment on sanitation and beside these there are a thousand questions that may and continually do arise in constructing and amending the laws where medical knowledge is of the highest value and where the lack of it may be disastrous in its effects. There is need, moreover, of the medical element in our halls of legislation; no class of men are closer to the people and better know their needs than do physicians, and a high professional training and education is no bad preparation for public service. The record of a RUSH, a MITCHILL, a VIRCHOW and a VERGA is an evidence of this fact, and there is actual need of the employment of this special class of talent in this country at the present time. A sprinkling of first-class medical men in Congress would be a most desirable addition.

To have it so, would be in accordance with the best precedents and traditions of our country. In the days of the Revolution when educated doctors were

few and far between, and there was not a single medical school in the land, five out of the fifty-six signers of the Declaration of Independence, DRS. RUSH, WOLCOTT, THORNTON, BARTLETT and HALL, were members of our profession, thus making over 9 per cent. of the members of the first Continental Congress; a proportion that well showed the rank of our profession in popular estimation in those times that tried men's souls.

NAVAL APOTHECARIES.

Not every vessel in the navy carries a medical officer; yet every vessel, however insignificant, has both captain and apothecary, representing opposite ends of the pole in the matter of personal and official consequence. The naval apothecary has come down to us from the time of BENBOW. He was only a "man before the mast" then, and he is only a "man before the mast" now, though his qualifications have risen with the times and the attempt is now made to secure graduates in pharmacy for those positions. It is not surprising, therefore, that association with the coarse, illiterate denizens of the berth-deck, which befitted the mere manipulator of an enema syringe or the dresser of a suppurating bubo, should be repulsive to young men who are able to pass the examinations of the modern schools of pharmacy, nor that they should demand, at least, an equality of position with the paymaster's clerk, who needs only know how to read, write and cipher.

The apothecary on board ship is the right-hand man of the medical officer. He compounds and administers the remedies prescribed, and beside his work as surgical and clinical aid, he performs such clerical duty as may be required, and in these days of complicated forms of returns of property, inventories, requisitions, vouchers, explanatory letters and other official communications, this is no inconsiderable labor, especially on board a flagship at sea or at a hospital on shore. If the ensign who prepares or copies the commanding officer's letters, or the pay clerk who adds up columns of figures and witnesses the payment of money to the crew, are fit to wear the uniform of an officer and have quarters in what used to be known as the steerage, there can certainly be no impropriety in the man who is required to know and to perform the complex operations of the pharmacopœia living under the same conditions.

In nearly other civilized country in the world than the United States, the pharmacist is held in high esteem, and the elaborate report of the special committee on legislation of the American Pharmaceutical Association appointed in 1894, consisting of a member from each State and Territory and of which DR. GEORGE F. PAYNE, State Chemist, Altanta, Ga., is chairman, exhibits in detail the status of pharmacists in the armies and navies of European States, much of the information having been translated from the *Pharmaceutische Zeitung* by OTTO HOFFMAN, A. B. In some of these countries pharmacists are officers with definite high rank. In France the Inspecteur Général is a major-general. In Russia, Counselor of State is the highest title obtained by the pharmacist by virtue of his rank. In Belgium, the chief pharmacist has the rank of lieutenant-colonel, two that of major, with others in grades down to that of second lieutenant. In Italy, one chemico-pharmaceutic inspector has the rank of lieutenant-colonel, one director and six head pharmacists that of major, twenty-seven are captains, thirty are first lieutenants and forty are second lieutenants. In Holland and the Dutch colonies, the military pharmaceutic service is performed by military pharmacists, who rank as officers and belong to the corps of sanitary officers. The directing pharmacist is a lieutenant-colonel with a salary of 9,000 guilders, about $3,600. The directing pharmacist of the second class receives 7,800 guilders ($3,120); pharmacists of the first class 4,800 guilders ($1,920) and of the second class 2,700 guilders ($1,080). "To this is added a free dwelling or a compensation for such, which ranges between 500 and 2,000 guilders ($200 to $800) according to rank and station." In Switzerland, the staff pharmacist has the rank of a major and in Germany and Austria a colonel's grade is the blue ribbon to which the military pharmacist aspires.

In the United States navy he is *an enlisted man*. In the army he is known as the Hospital Steward. His pay begins at $45 a month, and never exceeds $50. In the navy his designation is Apothecary, and he rates as an enlisted petty officer, sandwiched between the yeoman and the bandmaster; but inferior in pay and position to machinists, chief carpenter's, gunner's and boatswain's mates, chief quartermasters and masters-at-arms. Nevertheless, the candidate for enlistment as an apothecary in the navy

"Must pass the usual physical examination, and must present testimonials or certificates as to character, good habits and sobriety. They are also required to pass a satisfactory examination in the following subjects, viz.: 1. *General education.* Arithmatic, orthography, writing (legible and gramatical), geography and history of the United States. 2. *Professional.* Materia medica—a knowledge of the botanic name, origin, habitat, preparations and doses of the drugs recognized by the Pharmacopœia; pharmacy—a knowledge of the various pharmaceutic processes employed in the manufacture of the various officinal and official preparations, and the relative proportions of the more important drugs entering into the composition of these preparations; chemistry—a knowledge of chemic symbols, the formulas of the more important official chemicals and of the reactions produced by the combination of chemicals; toxicology—a knowledge of the symptoms of toxic doses and antidotes of poisons. The recognition of crude drugs, the making of ordinary pharmaceutic preparations, the compounding of prescriptions and the criticising of prescriptions incorrect by reason of pharmaceutic or chemic incompatibility or from dangerous doses. A practical knowledge of bandaging, *minor surgery*, application of dry and wet cups is desirable for which the applicant will be given due credit."

He may be both an A.B. or B.S. and a G.Ph., but he must live on the berth-deck, an enlisted "man before the mast," with the pay of a boilermaker, $60 a a month, and less than to that of the master-at-arms ($65) and machinist ($70). Boatswains, gunners, carpenters and sailmakers are warrant officers with special mess and quarters and pay ranging from $700 to $1,800, and all that the apothecaries themselves are asking in a bill before Congress is that they shall be raised to the level of these warrant officers, with equivalent rank, pay and privileges. Many old officers of the navy, however, are of opinion that the grade of warrant officer should be abolished, the duties of the boatswain, carpenter and sailmaker being performed by their mates, who are mechanics, and as such properly are of the rank of machinists, boilermakers, blacksmiths, plumbers, painters and the like, while the gunner should give place to the ordnance lieutenant, to which promotion from the ranks should be provided. The pharmacist should become a "steerage" officer, along with the pay clerk, as befitting his general culture and professional education. If this be done, the old-time apothecary, who was shipped for a cruise, the "Doc" of the berth-deck and forecastle, who could never be intrusted with the key of the medical storeroom lest he drink the wines and liquors provided for the sick, who was suspected, with good reason, of having a considerable surreptitious practice among syphilitic and gonorrheal sailors and marines seeking in this way to escape restriction of their liberty, who on shore paraded himself as one of the doctors of the vessel, whom it was never safe to permit to dally with metric subdivisions of strychnin, morphin or arsenious acid, and who, indeed, usually managed to clandestinely possess himself of a set of apothecary's weights to avoid shipwreck on the shoals of grams and cubic centimeters, will have disappeared from the service, and his place be filled by a gentlemanly, intelligent, educated young man, whose pride in his G.Ph. will be creditable to the navy and an assurance that he will not attempt to usurp the functions and wear the borrowed clothes of his medical superior.

MEDICO-MILITARY TITLES.

We have now neither medical directors nor post surgeons in the medical department of our army. The revision of the Army Regulations issued a few weeks ago, abolished the one, and the first circular of the present year, published from Headquarters of the Army January 2, has done away with the other. The medical officer on the staff of a general commanding a department, an army or an army corps, known during the greater part of the past century as a medical director, has now become the chief surgeon of the command, to give uniformity to the titles of the staff functionaries, who are the chief quartermaster, chief commissary, chief paymaster, etc. The recent circular brings the staff of a post commander into uniformity with this system of nomenclature, by directing that hereafter the senior medical officer of a military post will be known officially as the surgeon, and the other officers as the adjutant, the quartermaster, the signal officer, etc.

These changes by the present energetic Secretary of War must meet with general approval as indicating, with business-like directness and brevity, the office held by each staff officer. So well do they commend themselves to us, that we are inclined to inquire why a series of complex titles are retained to express the position of individual officers in addition to the now simplified title of the office which they fill. The chief surgeon, chief quartermaster, or chief commissary of a department may be an officer with the rank of colonel, and the designation of assistant surgeon general, assistant quartermaster general, or assistant commissary general, according to his corps; or one with the rank of lieutenant-colonel, and the personal status of a deputy surgeon general, deputy quartermaster general, etc., or he may be merely a surgeon, quartermaster, or commissary, with the rank of major. There seems to be no need of the special designations of deputies and assistants to the chiefs of military bureaux, as the responsibilities and duties undertaken and performed by officers having these titles may be performed as well by an officer with the rank of major. These special designations are high-sounding titles which mean nothing, puny survivals in modern life of the grand, mighty, illustrious and supreme so and so's of the dark and middle ages. The rank, pay and status of officers senior to majors are defined sufficiently by the rank of lieutenant-colonel and colonel, without the appended titular embellishments.

This leads us to realize that there is as little need for special designations for surgeons below the rank of major as for those above this rank, as little need to detract from the dignity of a surgeon below the rank of major by calling him an assistant surgeon as there is to attempt to add to the dignity of an officer with the rank of lieutenant-colonel or colonel by calling him a deputy or an assistant surgeon general.

Before entering the army a candidate for position in the medical staff must have fulfilled all the legal requirements, to authorize him to practice medicine and surgery. In civil life he is a physician and surgeon; but when he enters the army he ceases officially to be what he legally is, and becomes an assistant surgeon. His pay, emoluments and official status are defined sufficiently by the junior rank of lieutenant or captain; and no object is effected by prefixing assistant to his professional title. The position we assume is, that the Secretary of War could, with ad-

vantage, go further than he has gone in the direction of business-like brevity and uniformity in the titles of our professional brethren in the military service. Graded official titles outside of those defining rank are an encumbrance also among the quartermasters, and members of the other staff corps, but we have no particular concern about them.

THE INSIGNIA OF THE ARMY MEDICAL DEPARTMENT.

The selection of insignia for the medical department of the army has been before the officers of that department in an unofficial way for many months. It is now before them officially, and the question will no doubt be settled promptly. The Surgeon General has appointed a board to consider the subject, and has requested officers who have suggestions to make to communicate them to COL. CHARLES H. ALDEN, Assistant Surgeon General, the president of the board.

At the present time the medical department is practically without any distinctive insignia. From early times the letters M. D. were embroidered in silver on the black ground of the epaulettes or shoulder knots, but this lettering was always as distasteful to medical officers as the P. D. and Q. D. of the pay department and quartermaster's department were to the officers who had to wear them. Three or four years ago, when some changes were made in the uniform, the national shield in gold was proposed and approved as a substitute for the lettering of the medical department. The shield, however, has never given general satisfaction, inasmuch as although emblematic of defense, it has no association with defense by medical men against disease or death; and, moreover, a shield in silver with thirteen stars has already been assigned as the insignia of the adjutant general's department. These objections led to the agitation which has been going on for some time and no doubt to the recent appointment of a board to settle the question.

So far as we can ascertain, the majority of the corps is in favor of the red cross of the Geneva Convention in an artistic setting of embroidered gold; and this seems to be the most appropriate and distinctive emblem that could be adopted. All civilized nations have signed the Treaty of Geneva, and adopted the red cross as their military hospital flag, so that the association of this emblem with an army medical department is widely known. The seventh article of the convention requires that all hospitals and ambulances shall carry, in addition to the flag of their nation, a distinctive and uniform flag having a red cross on a white ground. Moreover, in time of war all the members of the staff of the hospitals and ambulances must wear an arm badge or brassart having this emblem on it to insure them the neutrality guaranteed by the treaty. Our own hospital corps wears the cross on the brassart. What more appropriate, therefore, than that the red cross should constitute the insignia of the medical department? Some officers have objected to it as being the emblem of the American Branch of the Red Cross International Society; but it is the emblem of this society only because it is the regulation hospital flag of the army. The members and employes of the Aid Society, if they are to constitute any part of the staff of a military hospital in time of war, must wear the cross in accordance with the terms of the treaty. They become, in fact, a part of the army medical department.

NEW INSTRUMENTS.

COVER-GLASS FORCEPS.

BY O. E. LINJER, M.D.
STARBUCK, MINN.

To those who are familiar with microscopic technique the following illustrations of a cover-glass forceps devised by me are self-explanatory. Clinical microscopy demands the simplest as well as most rapid methods consistent with accuracy. None of the many cover-glass forceps now in use are adapted to modern microscopic work. For staining sputum, pus, blood, etc., the complete process, from fixing to placing of cover-glass on slide, may be carried out while cover-glass is held in forceps.

The following advantages are claimed for these forceps: 1. The cover-glass while on its flat side can be rapidly picked up from any surface whether glass, marble, wood or paper. 2. The cover-glass is held level, firmly and anatomically. 3. No possibility of cover-glass slipping out of or breaking while held in forceps. 4. Hands of operators are kept free from stains and acids. 5. The edge only of cover-glass being grasped and held by forceps, admits of the whole surface of the cover-glass being stained. 6. Cover-glass can be drained by placing forceps on the side.

These cover-glass forceps are manufactured and sold by Chas. Truax, Greene & Co., of Chicago. Every pair of forceps, if properly made, possesses the above mentioned advantages over the clumsy forceps formerly used.

CORRESPONDENCE.

Treatment of Typhoid Fever.

LEBANON, IND., Jan. 21, 1896.

To the Editor:—From time to time we read in this most excellent journal articles extolling the Woodbridge treatment for the most dreaded of fevers in our country. In the JOURNAL of January 11, this year, there is a well-worded article on this subject in which the writer rids the patient of danger and jests at the alarm of the family in this most dreadful disease. I will never forget what Prof. J. M. Da Costa said in the beginning of his lectures on fevers: "Gentlemen, this is the fever of this country; *nay*, it is the fever of the world," and surely Prof. Mitchell's adage of piloting the ship

clear of breakers is as true to-day as the day it was spoken. No doubt Dr. Woodbridge has added some enthusiasm to our modern principles of typhoid fever treatment. But let us not lose our power of reasoning and accurate observation until we see more of this treatment. I read with interest his paper at the Baltimore meeting, and with more interest the discussion by Drs. Pepper and Osler, in which the former stated that each time we had discovered a panacea in medicine or plan of treatment for this disease, we were disappointed in the next epidemic by a frightful mortality.

Typhoid fever, in all probability, has existed for ages past, but it was left for an American physician about sixty years ago to catalogue it as a distinct disease. Now from one decade to another we are learning to treat it better, each enthusiast on the subject adding his mite. Dr. Graves, of Dublin, wanted it engraved on his tombstone how he fed fevers. And now let me ask Dr. Woodbridge and his followers if we take from a typhoid fever patient proper hygienic surroundings, proper feeding and good nursing, what good will his or any other treatment do? My partner, Dr. C. J. Lidikay, and I bought of Parke Davis & Co. the Woodbridge medicines and commenced the use of them last year in good faith. Our first patient was a most favorable one for the treatment, a formerly healthy girl 12 years old, in a family with two other cases of typhoid fever. We followed the plan in minute detail, and the fever went through its regular stages, lasted four weeks, and we could not see that the treatment did any more good than any other sensible plan of management. We tried it faithfully on fourteen cases in two families on the same farm who used the water out of a polluted well. It never modified nor shortened the duration of a single case, for they all went through the regular stages. They all got well but one, who took double parotitis while convalescing. Five other children out of one other family who visited this farm took the fever and two died, one from hemorrhage and one from the severity of the lesions after four weeks' sickness. We treated over forty cases of all grades of intensity with only the loss of these three cases. And at last treated my only child last October through a typhoid fever. I tried the Woodbridge treatment up to the second week, when her stomach rebelled against the soft capsules and emulsion of the same. We then nursed her with just enough medicine to control symptoms. The fever reached 100 deegrees four successive days the latter part of the third week, and we have nursed her three months since to tide her over the effect of this awful fever, encountering several dangerous breakers along the line.

Dr. Osler said the best thing he could see about this treatment was that the medicine was harmless. Woodbridge has emphasized one principle that will last, and that is that the bowel will stand more cleaning out with less danger than was formerly thought. Typhoid fever still holds sway over patients. We are between *Scylla* and *Charybdis* in its treatment, and it is a plague to any family or community. W. F. Batman.

The Royal Colleges and the Women.

To the Editor:—The recent action of the Royal Colleges of Physicians and Surgeons, England, in declining, by a narrow vote, to grant women their diplomas, is indicative both of the remaining prejudice against women doctors and the progress of their efforts for complete recognition by the profession.

The two chief arguments against them, aside from natural unfitness, were that they commonly entered the profession from improper motives, and that they had contributed nothing toward its advance. It is thus quite evident that some of our professional brethren across the water, have been expecting too much from the "gentler sex," for the very same arguments will apply equally well to not a few of the masculine denomination. Also the fact seems to have been overlooked that the "new" woman is still comparatively new and has hardly had time to evolve that increase of brain and the desexing process which are finally to fit her with that keen, cool, deliberative mind requisite to rule the earth on scientific principles. The "new" woman may not possess the charms of a Cleopatra, but she craves her power and if she can not attain it the one way, why should she not try another? There can be but little objection to giving her every privilege within the bounds of propriety, for in so doing her superiority in some department of medicine will the sooner be demonstrated, or her mania the sooner ended.

Doubtless some enter the profession from the loftiest motives, and do credit to it, and whether or not, after all is considered, they have mistaken their calling, is for them individually to judge. It is to be hoped that ere long they will have no occasion to complain of unequal privileges in such an enlightened city as London. J. S. C.

A Knotted Umbilical Cord.

Berwyn, Ill., Jan. 16, 1896.

To the Editor:—A rather unique case occurred in my obstetric practice at this place last week. Mrs. S., who was under my care and expected to be confined late in February, sent for me early the morning of January 10. Upon arriving at the house I found my patient in the midst of labor, regular pains, very frequent and severe. Examination revealed dilated os, breech presentation, no evidence of fetus being alive. A short time later delivery was accomplished. The fetus was dead. Stage of development was that of a seven-months' fetus. It weighed about three pounds, and gave evidence of having been dead some little time, as it was considerably macerated. Upon examination of the cord I found a tight knot about midway between fetus and placenta. This undoubtedly had caused fetal death, which precipitated labor. The mother had not felt life for several days previously. Possibly this case may be of interest as evidence that the fetus does enjoy considerable latitude of motion in utero.

Very respectfully yours, Arthur MacNeal, M.D.

Suspensio Uteri or Ventro-Fixation of the Uterus—its Influence upon Pregnancy and Labor.

To the Editor:—Having recently had some unfortunate experience concerning suspensio uteri upon parturition, I feel that it is highly important that this question be settled in an authoritative way as soon as possible. The only way to determine the question is by studying the actual results as seen in the practice of all operators. I will be much indebted to any one having had a case of pregnancy following suspension of the uterus, if he will communicate the details of the case or cases to me. Very truly yours, Charles P. Noble.

1637 N. Broad St., Philadelphia.

Sexual Perversion.

Washington, D. C., Jan. 20, 1896.

To the Editor:—Having noticed in two of your late issues that correspondents ask for the definition of the word *tribadism*, I will call attention to the very full and comprehensive article by Dr. Irving C. Rosse, of Washington, D. C., on "Unnatural Crimes," in vol. II, p. 493, of Witthaus and Becker's "Medical Jurisprudence." In this valuable and instructive paper, your correspondents will find detailed information as to the various forms of sexual perversion as observed by neurologists and as treated from the view point of medico-legal knowledge. Trusting the reference, as already given above, may be of service to your correspondents. I remain, yours respectfully,

Edwin L. Morgan, M.D.

2315 Pennsylvania Avenue, N. W.

Transactions of XI International Medical Congress.

CAMBRIDGE, MASS., Jan. 20, 1896.

To the Editor:—In the Miscellany of the JOURNAL of January 18, page 142, inquiry is made as to what time the volumes of the XIth International Medical Congress at Rome, Italy, will be ready for distribution.

In answer, I would say that I received some months ago direct from Messrs. Rosenberg & Sellier, Libreria Internazionale, Via Bogino 3, Torino, Italy, volume II, and on January 18, through the Bureau of International Exchanges, Smithsonian Institution, Washington, D. C., volumes III and IV.

For members to receive their volumes promptly it will be necessary to make remittance of 7.50 francs to the house of Rosenberg & Sellier, Libreria Internazionale, Via Bogino 3, Torino, Italy, to meet the expenses of the distribution.

Sincerely yours, AUGUSTUS P. CLARKE.

A New Medical Society.

KANSAS CITY, MO., Jan. 16, 1896.

To the Editor:—On April 7, 10 A.M., at the Midland Hotel in Kansas City, Mo., a meeting will be held for the purpose of forming a society of laryngologists, rhinologists and otologists. All Western physicians engaged in the above specialties are cordially and earnestly invited to be present and aid in the work. Kindly give this a notice in your JOURNAL.

HAL FOSTER, M.D.

BOOK NOTICES.

Diet in Sickness and in Health. By MRS. ERNEST HART, with an introduction by SIR HENRY THOMPSON, F.R.C.S. 8vo, pp. 219. London: The Scientific Press; Philadelphia: W. B. Saunders. 1895.

"No man," says Sir Henry Thompson in the introduction, "is a really accomplished physician or surgeon who has not made dietetic principles and practice an important part of his professional education." Those who had the pleasure of meeting the accomplished authoress in the "Irish Village" at the World's Fair in Chicago, will not be surprised to learn that she has managed to sandwich many an interesting sketch from the scenes of her travels, which add piquancy to the pages of a scientific book, without in the least detracting from its high professional standard. In speaking of tea, she says, pp. 34 and 35:

"Every Japanese household, however poor, possesses a large metal teakettle, and a small porcelain or pottery teapot. Into the tiny teapot is placed a small amount of fine green tea. On this is poured water not quite boiling. Without allowing the water to stand on the leaves more than a moment or two, the tea is poured into small porcelain cups and drunk pure without any admixture. Tea taken in this way is extraordinarily refreshing. When in Japan, I have sometimes, after being engaged in the fatiguing, incessant but fascinating occupation of shopping, turned to the saleswoman serving me and said, *O cha dozo oka san*, which means, 'Please give me a cup of your honorable tea, good lady,' at which request the tiny teapot has been immediately produced with many smiles and bows, and has yielded an astonishing number of small cups, water being continually added from the pretty chased iron kettle. After this 'restoration' shopping again became fascinating."

The tea ceremony in Japan is thus described:

"There is another kind of tea which is also drunk in Japan on the occasion of the unique and solemn Tea Ceremony. This ceremony, which has become a national and tenaciously held custom, was invented by a great chieftain called Hideyoshi, in the early part of the sixteenth century, with the object of teaching his turbulent barons to be courteous, self-controlled and silent. At the Tea Ceremony, the details of which are long, elaborate and definitely arranged, a fine green tea which has been ground into powder is brewed in a regular and ceremonious manner by an officer of the household, called the Cha-nou. The tea powder is stirred with a whisk in hot water in an antique bowl. This bowl of tea is handed round to the guests seated on their heels on the matting, and is drunk, tea-dust and all, in solemn silence, the bowl being returned to the Cha-nou with forehead bowed to the ground."

But the book must be read to be best appreciated. It is well illustrated and neatly printed.

The American Year-Book of Medicine and Surgery; being a yearly digest of Scientific Progress and Authoritative Opinion in all branches of Medicine and Surgery, drawn from Journals, Monographs and Text-books, of the leading American and Foreign Authors and Investigators. Collected and arranged with critical comments by J. M. Baldy, M.D., C. H. Burnett, M.D., Archibald Church, M.D., C. F. Clarke, M.D., J. Chalmers Da Costa, M.D., W. A. N. Dorland, M.D., V. P. Gibney, M.D., Homer W. Gibney, M.D., Henry A. Griffin, M.D., John Guitéras, M.D., C. A. Hamann, M.D., H. F. Hansell, M.D., W. A. Hardaway, M.D., T. M. Hardie, B.A., M.B., C. F. Hersman, M.D., B. C. Hirst, M.D., E. Fletcher Ingals, M.D., W. W. Keen, M.D., H. Leffman, M.D., V. H. Norrie, M.D., H. J. Patrick, M.D., Wm. Pepper, M.D., D. Riesman, M.D., Louis Starr, M.D., Alfred Stengel, M.D., G. N. Stewart, M.D., Thompson S. Westcott, M.D.: under the general editorial charge of GEORGE M. GOULD, M.D. Illustrated with numerous woodcuts in text and thirty-three half tone and colored plates. 8vo, cl., pp. 1183. Philadelphia: W. B. Saunders. 1896. [From W. T. Keener, Chicago.]

This work is one of the most elaborate digests, and while it does not assume to constitute a digest of the entire volume of medical literature of the year, it yet seeks to give a summary of what is new and valuable in the progress of the art during the period covered by it. "It is confidently believed," says the editor in his preface, "that no very significant fact has escaped review in the present pages: the material used has been not only the periodicals of the year, but also the more important monographs, text-books, etc. It has been an onerous task to all concerned to condense this enormous mass of matter so that we could offer the product in a single volume. The making of medical books has been so prolific that both the expense and the library space of the physician have become highly important considerations which we have kept steadily in view."

The editors have done their work well, and the book as finished is beyond praise. The publisher has spared no pains to produce a book with faultless typography and superb illustrations.

The Diseases of Children, Medical and Surgical. By HENRY ASHBY, M.D., F.R.C.P., and A. WRIGHT, B.A., M.B., F.R.C.S. Third edition, edited for American students by WILLIAM PERRY NORTHROP, A.M., M.D. 8vo, cl., pp. 840. New York: Longmans, Greene & Co. 1896.

This is an elaborate book covering the entire field of pediatrics, both in medicine and surgery. The use of small type has enabled the authors to put a vast amount of material into the work without making it unduly bulky. There are twenty-seven chapters and 200 illustrations; these illustrations mostly from photographs of cases under the care of the authors. Little change has been made by the American editor, who thought best to leave the body of the book intact and insert his own views in the appendix. The formulæ were rewritten, except the old system of weights and measures, which are unchanged. This is one of the most useful books on the medical and surgical diseases of children that have recently appeared, and our readers will find it very satisfactory for reference. The teachings are sound and conservative.

Therapeutics of Infancy and Childhood. By A. JACOBI, M.D. Philadelphia: J. B. Lippincott Company. 8vo, cl., pp. 518. 1896.

Dr. Jacobi has succeeded in so impressing his personality upon the profession in this country, since he established the first American course of clinical instruction in pediatrics, thirty-five years ago, that his book will be welcomed with something like enthusiasm.

There are sixteen chapters, viz.: 1. Feeding of Sick Children. 2. Treatment of the Newly Born. 3. General Thera-

peutics. 4. Constitutional Diseases. 5. Infectious Diseases. 6. Diseases of the Digestive Organs. 7. Diseases of the Genito-urinary Organs. 8. Diseases of the Respiratory Organs. 9. Diseases of the Organs of Circulation. 10. Diseases of the Nervous System. 11. Diseases of the Skin. 12. Diseases of the Ear. 13. Diseases of the Eye. 14. Diseases of the Muscles. 15. Diseases of the Bones and Joints. 16. Addenda.

In the last chapter the topics discussed are Laborde's method of treating asphyxia, pernicious anemia, infantile scurvy, thyroid feeding, antitoxin and milk sterilization. The author's recommendations are wise and conservative, and will have that weight and authority which his long and useful life so well entitles him to expect.

A History of the Chronic Degenerative Diseases of the Central Nervous System. By THOMAS KIRKPATRICK MONRO, M.A., M.D. 8vo Cl. Glasgow: Alex. Macdougall, 1895.

This work is a republication of a series of papers first published in the Glasgow *Medical Journal* of last year. They consist of historical studies of a number of the chronic disorders that "depend upon primary degenerative changes in the structure of the central nervous system," including tabes, primary spastic paralysis, ataxic paraplegia, Friedrich's disease, progressive muscular atrophy, bulbar paralysis, ophthalmoplegia, the peroneal type of muscular atrophy, and multiple sclerosis. The author omits paresis and primary optic atrophy which he admits might also be included in this class considered from some points of view.

The historical study seems to have been quite well and thoroughly done and the discussion of the different questions that have arisen in regard to the various authors who have written on these disorders is fair and judicious. While the scope of the work might have been extended, even beyond what is indicated by the author, to fully include the class of affections considered, it is, as far as it attempts to give, a very creditable contribution to medical literature.

The Retrospect of Medicine. A Half-Yearly Journal containing a Retrospective View of every Discovery and Practical Improvement in the Medical Sciences. Edited by JAMES BRAITHWAITE, M.D., etc., assisted by E. F. TREVELYAN, M.D., etc. Volume cxii, July to December, 1895. Issued January, 1896. London: Simpkin, Marshall, Hamilton, Kent & Co.

The current volume of "Braithwaite" is an interesting one. In whatever department of medical literature one may be interested, he will here find much to instruct and entertain him. The selections are judicious and drawn from a wide field. American medical literature seems fully represented.

Chemically Pure Hypophosphites and Syrup of Hydriodic Acid. By R. W. GARDNER. New York. 1895. Mailed on application.

This book is a complete dissertation on the uses of these drugs, and contains matter of considerable importance to the general practitioner.

PUBLIC HEALTH.

Municipal Cold Storage.—The municipality of Genoa, Italy, has constructed a cold storage plant at an expense of 60,000 lire, which nets 10,000 lire to the city every year. It is principally for meat which is received from America direct, according to Prof. Perroucito's report on the subject to the Society of Hygiene at Turin.

Tubercle Bacilli in Milk.—Obermüller (*Hygien. Rundschau*, 1895, No. 19) undertook to examine milk purchased from dealers, for the presence of tubercle bacilli, because it seemed probable that, in view of the large number of tuberculous cows, bacilli would often be present in milk. He therefore injected into the peritoneal cavity of forty guinea pigs 2 to 2½ c.c. of milk. Of these forty, three died from extensive tuberculosis of the peritoneum. In a second series of experiments the author used the sediment of centrifugalized milk mixed with the cream of the same milk, because it was learned from control experiments, that bacilli in centrifugalized milk not only reach the sediment, but also the layer of cream. With this mixture he injected intraperitoneally twenty-six guinea pigs, giving each 1 to 1.5 c.c., and of these ten, or 38 per cent., died from tuberculosis. Inasmuch as boiling as well as pasteurization of milk in reality are only palliative measures, he advocates strongly the weeding out of tuberculous animals after testing with tuberculin.

Sanitary Homes for the Working Classes.—The *Revista de Hijiene*, of Santiago, Chile, brings us an important article on the subject of sanitary homes for the working classes. The author, after a masterly historic summary, concludes that it is a matter in which neither the government nor the municipality should take the initiative, as that is sure to lead to abuses, but they should encourage and foster private enterprise by legislation, remitting taxes, etc. This would make the enterprise a safe and profitable investment for associations, which, experience shows, accomplish more than individuals. He draws a terrible picture of the present homes of this class in Santiago, where hygiene is only just beginning to receive attention among the well-to-do, and the poor are crowded together in small, low, damp huts, on unpaved streets, without a single opening except the entrance from the street, and with the sewage in open ditches, often stagnant. The floor is frequently below the level of the street, which means constant infiltration of dampness. The huts called *ranchos* are still worse, as the green materials of which they are composed are always moist and decaying. A slight improvement are the *conventillos*, which are the usual round houses without windows or doors except the one entrance from the street, but they open on a private street which serves as a common court where all the cooking and washing are done outside of the house. Nearly every hut contains, besides the family, one or more domestic animals. The author ascribes the unusual amount of drunkenness in Santiago to these uninviting homes. There were 24,034 arrests for this cause alone in 1893, while in all London there were only 30,000, and in Valparaiso 12,828. He admits that Santiago is behind other cities in the country in sanitary living, although location and climate are exceptionally favorable. If it were not for the latter, with its cool nights all the year around, epidemics would certainly prevail all the time, instead of being limited to August, September and October.

Health Reports.—The following health reports have been received in the office of the Supervising Surgeon-General Marine-Hospital Service:

SMALLPOX—UNITED STATES.

Arizona: Nogales, January 13, 1 case.
Arkansas: Mayflower, Faulkner County, January 4 to 13, 2 cases; (near) Conway, Faulkner County, January 4 to 13, 6 cases; Widener, January 4 to 13, 1 case; Crittenden County, January 19, 24 cases, 5 deaths.
Illinois: Chicago, December 1 to 31, 2 deaths; Cairo, January 14, 2 deaths.
Indiana: Michigan City, year 1895, 1 death.
Louisiana: New Orleans, January 4 to 11, 7 cases, 1 death.
Michigan: Detroit, January 4 to 18, 2 cases.
Missouri: Birds Point, January 14, smallpox reported present.
Tennessee: Memphis, January 1 to 18, 6 cases.

SMALLPOX—FOREIGN.

Cairo, December 7 to 16, 1 death.
Corunna, December 1 to 31, 5 deaths.
Dublin, December 28 to January 4, 1 case.
Havana, January 2 to 9, 2 deaths.
Madrid, December 24 to 31, 11 deaths.
Montevideo, December 7 to 14, 2 cases.
Moscow, December 14 to 21, 1 case.
Odessa, December 21 to 28, 8 cases.
Prague, December 7 to 14, 26 cases; December 24 to 28, 6 cases.
Rio de Janeiro, December 7 to 21, 72 deaths.

St. Petersburg, December 21 to 28, 7 cases, 2 deaths.
Trieste, December 7 to 28, 2 cases, 1 death.
Warsaw, December 7 to 21, 4 deaths.

CHOLERA—FOREIGN.

Austria-Hungary, December 17 to 22, 5 cases, 2 deaths.
Egypt: Cairo, December 9 to 16, 1 death; Borachia, December 15 to 16, 2 cases; Damietta, December 12, 1 death; Farraskour, December 11 to 12, 2 cases, 2 deaths; Hehya, December 13, 1 death; Kafr-el-Battickh, December 12 to 17, 28 cases, 15 deaths; Mansurah, December 17, 1 case, 1 death; Zagazig, December 15 to 18, 5 cases, 2 deaths.
Russia: Kiev (government), November 17 to December 7, 219 cases, 85 deaths; Orlov (government), November 3 to December 7, 17 cases, 6 deaths; St. Petersburg (city), November 30 to December 7, 73 cases, 46 deaths; December 21 to 28, 56 cases, 48 deaths; St. Petersburg (government), November 17 to December 7, 21 cases, 2 deaths; Volhynia (government), November 17 to 30, 442 cases, 184 deaths.
India: Bombay, December 10 to 17, 2 deaths; Calcutta, December 1 to 7, 59 deaths.

YELLOW FEVER—FOREIGN.

Cuba: Cienfuegos, December 29 to January 5, 3 deaths; Sagua la Grande, December 28 to January 4, 12 cases, 5 deaths; Santiago de Cuba, December 28 to January 4, 15 deaths.
Brazil: Rio de Janeiro, December 7 to 21, 55 deaths.

NECROLOGY.

DR. L. CH. BOISLINIERE died January 13, aged 80. His death takes away one of the most honored of the medical profession of St. Louis, where he lived and worked for almost fifty years. He was born in the West Indies in 1816. He went to France to continue his education and graduated in law at the University of Paris. He soon began to show a preference for medicine, and became a member of the Anthropological Society of Paris. His connection with the society was maintained until his death. On returning to America in 1846, for some time he made his home in Louisville, Ky., then came to St. Louis and graduated from the St. Louis Medical College in the class of 1848. In 1870 he succeeded Dr. M. M. Pallen as Professor of Obstetrics in his Alma Mater; at the time of his death he was Professor Emeritus. Dr. Boisliniere will be remembered for his unfailing kindness, his wide learning and his enduring influence on the profession. Among his earlier achievements was his success in bringing the Sisters of St. Anne to St. Louis, who established here the first lying-in hospital west of the Alleghany mountains. At a called meeting of physicians held at the Missouri Medical College, Dr. W. G. Moore, president of the St. Louis Medical Society, presented resolutions which embodied an eloquent tribute to the memory of Dr. Boisliniere. Addresses in eulogy of the departed physician were made by Drs. J. K. Bauduy, I. N. Love, E. F. Smith, W. A. Hardaway, P. S. O'Reilly, J. P. Bryson, P. G. Robinson, W. B. Dorsett and others. Dr. Hardaway spoke in favor of erecting some suitable memorial in honor of the deceased, and Dr. Moore appointed Drs. Hardaway, Dorsett, Bauduy and Bryson a committee to report upon this project.

JOHN FORD BARBOUR, M.D., of Louisville, Ky., died January 15. The news of the death of Dr. Barbour came as a great shock to his many friends, as his illness was unknown except to a few. Several weeks ago he contracted a pleurisy, but was not thought to be seriously ill until a day or so before his death. Dr. Barbour was born in Lexington, Mo., may 25, 1861, and was the son of Prof. Louis G. Barbour, D.D., LL.D., who is professor of mathematics at Central University, at Richmond, Ky. Dr. Barbour was a graduate of Central University and afterward studied medicine at the Hospital College of Medicine, this city, graduating at University of New York, Medical Department, in 1884. He returned to Louisville and began the practice of his profession in 1884, and soon worked his way up to a large practice. Dr. Barbour paid special attention to diseases of the nervous system and of the stomach, and some of his most valuable contributions to medical literature were upon these subjects, among which may be mentioned "The Present Status of Craniectomy," a paper read before the Louisville Academy of Medicine; "Neurasthenia," a paper presented at a recent meeting of the Louisville Medico-Chirurgical Society, and "The Modern Treatment of Diseases of the Stomach," read before the Louisville Clinical Society. Had he turned his attention to music instead of medicine he would have made a great reputation as a composer and performer. Some of his compositions have been commended very highly by critics, and he was an excellent pianist. He was the editor of the *New Albany Medical Herald*; a member of the Kentucky State Medical Society; Louisville Academy of Medicine; Louisville Medico-Chirurgical and Louisville Clinical Societies, and also a valued member of the Bluestocking Club, a prominent local literary society. After his return from New York he became attached to the staff of the Louisville Hospital College of medicine as lecturer on diseases of the nervous system, soon working up a large clinic; he was afterward assistant to the chair of practice, and from 1889 to 1892, professor of clinical medicine in the same school. Dr. Barbour was a brother of Dr. Philip F. Barbour, Professor of Chemistry in the Hospital College of Medicine; and cousin of Dr. P. C. S. Barbour, Superintendent of the Louisville City Hospital. He was also a member of the visiting staff of this institution. His remains were interred at Danville, Ky.

STEPHEN VAN RENSSELAER BOGERT, M.D., of Sailors' Snug Harbor, Staten Island, N. Y., died January 10, in the ninety-second year of his age. He was a native of Albany, N. Y., and graduated in 1825, from the College of Physicians and Surgeons at Fairfield, Western New York. He was about forty years the resident physician at the Sailors' Snug Harbor, and was consulting physician to the St. Nicholas Society of New York. About twelve years ago he retired from active practice. His interment took place in the Moravian Cemetery of Staten Island. His son, Edward S. Bogert, is a medical director of the United States Navy.

PIO RENGIFO, M.D., formerly editor of the *Revista Medica*, of Bogota, died at Panama, Colombia, January 14, from a cerebral hemorrhage. He was a graduate in medicine from the University of St. Andrews, Scotland, and studied in medical clinics of Berlin, Paris and Vienna. He practiced his profession in New York City for ten or more years and afterward was for a time located at Lima in Peru. He was a scholarly man, of fine attainments and of great force of character. His brother, Gen. Julio Rengifo, is well known in diplomatic circles at Washington.

C. V. BEEBE, M.D., of Superior, Wis., January 8, aged 54.——Abraham Losier, M.D., of New York, January 14.——Sarah J. Fearing, M.D., of Denver, Colo., January 11.——Orin Goodrich, M.D., of Troy, N. Y., December 23, aged 88 years.——E. P. Austin, M.D., of Noblesville, Ind., December 22, aged 89.

MISCELLANY.

Two Insane Asylums for Colored People.—Laws were in 1895 passed in Tennessee providing for the erection of two insane asylums for the insane colored people of West and Eart Tennessee respectively. One is to be on the grounds of the West Tennessee Insane Asylum near Bolivar, in Hardeman County; the other to be located upon the grounds of the Hospital for the Insane at Lyon's View, Knox County, Tennessee. Admission to each is to be apportioned to the counties within its part of the State according to population as shown by the latest federal census. The county physician, county judge or chairman of the county court has authority to send to the fomer institution. Pay patients shall be admitted to the latter, which is under control of the trustees of the institution on the grounds on which it is located.

Disposition of Criminals Recovering Reason.—Chapter 103 of the Laws of Wyoming enacted in 1895 provides for the custody and treatment, at such place or places as the board of charities and reform shall provide or prescribe, of persons of unsound mind who have been accused or convicted of criminal offenses. But section 5 thereof provides that if any such person or patient so confined in any hospital or asylum or place designated by said board shall recover his or her reason, he or she shall be returned to the penitentiary, county jail or other place of confinement or imprisonment where such person was confined at the time of the inquiry, trial or proceeding had to determine his or her sanity, or insanity, there to be tried or to serve out or undergo his or her term of imprisonment if any part thereof remains, as the nature of the case shall require.

A Philanthropic Physician Rewarded.—The following item from a religious weekly refers to a medical man of London who has long been engaged in caring for orphans and city waifs, his work in that direction running up into the thousands of boys and girls rescued and provided with homes. Dr. T. J. Barnardo has recently recovered from a severe illness, and his friends took the occasion of his return to duty to give him an evidence of their estimation of his work. An evidence of the extent of this work will be seen in the fact that he has to raise over $700 per day. The item reads as follows: "The work of Dr. Bernardo in caring for the destitute children of London has received public acknowledgment. At a reception at Exeter Hall he was presented with an illuminated address and a check worth $17,085. This was a personal gift apart from the children's support. Dr. Bernardo now has eighty-four homes in which 5,000 destitute children are clothed, fed and educated. The expenses are over $700 per day."

Albany Medical Alumni Dine.—The first annual dinner of the newly-formed Albany Medical College Alumni Association of Greater New York was given January 16. The association was organized December last, and has a membership of nearly seventy-five. The dinner was served in the octagonal banquet hall of the Hotel Savoy, and about fifty members assembled at the first festive meeting of the association. The President, Dr. John W. Warner, occupied the central seat of the table of honor. In company with him were the Rev. Dr. John E. Bushnell, Prof. Albert Van der Veer and Prof. Samuel B. Ward, of the faculty of the college; the Rev. Dr. Andrew V. Raymond, President of Union College, and Dr. Edward Hall. Among the guests were Assistant District-Attorney John F. McIntyre, John P. Faure, Commissioner of the Public Charities; Prof. William H. Thompson, ex-Congressman John S. Wise, of Virginia; Dr. Maurice J. Lewis, Secretary of the State Board of Medical Examiners, and St. Clair McKelway. There were also present the following officers of the alumni: Dr. Horace Macy Hanks, Vice-President; Dr. Warren C. Spalding, Secretary; Dr. Robert F. Macfarlane, Assistant Secretary; Dr. Allen Fitch, Treasurer; Dr. John A. Cutter, Dr. Robert E. Fivey, Dr. L. N. Lanehart, of Hempstead, N. Y., and Dr. Henry F. Muller, of Brooklyn, Governors.

Sale of Intoxicating Medicine.—A Mississippi judge not long since decided that if a certain duly licensed druggist sold essence of ginger, which, when diluted with water and drank to excess, would produce intoxication, he must be convicted of selling intoxicating liquors, without regard to his motive, its being a medicine, or the fact that as sold it could not be used as a beverage. As a consequence, apparently, the druggist was convicted of this violation of the law. But, Nov. 4, 1895, the supreme court of Mississippi reversed the judgment of the lower court. (Bertrand vs. State.) It says the test question in the case was whether the essence of tincture of ginger referred to was a medicine, sold as such in good faith, and not as a beverage, or whether it was a sham preparation, disguised as medicine, really an intoxicating liquor sold as a beverage. Evidence on this line, offered by the druggist, tending to show the character of the preparation and his good faith, it is held, should have been admitted. Likewise, he is declared to have had the right to have had the jury instructed that if they believed from the evidence that he, the accused, sold tincture of Jamaica ginger as a medicine, in good faith, and believed further from the evidence that the same was prepared by the directions of the United States dispensatory, and that the same was recognized by the medical profession of the United States, they should acquit.

Tennessee Restricts Holders of Inquests.—The laws of Tennessee were amended in 1895 to the effect that no inquest shall be held by the coroner or any justice of the peace over the dead body of any person or persons, until an affidavit in writing is made and signed by two or more reliable persons, averring the death of said person or persons, and that there is good reason to believe that such person or persons came to his, her or their death by unlawful violence at the hands of some other person or persons; and without such affidavit in writing, such coroner or justice shall have no jurisdiction to hold an inquest over the dead body of any person or persons whomsoever; and all proceedings without such affidavit shall be utterly void and useless unless these provisions are literally, rigidly and strictly complied with, and the affidavit filed with the papers, and the coroner or justice of the peace shall receive no fees or compensation for holding the inquest. If any person or persons shall falsely, willfully and corruptly swear out such affidavit as above provided for, such person or persons so swearing shall be deemed guilty of perjury, and punished as now provided for by law for said offense; and in addition to the penalty now provided by law for perjury, they shall be taxed with all the costs incidental to said inquisition, based upon said false and corrupt affidavit.

A Collective Inquiry Regarding Schlatter's "Cures."—The editor of *Voice* has been in correspondence with the medical men and others of Denver for the purpose of getting statements as to the alleged cures of Michael Schlatter. Three physicians reply that there were no cures known to them. Another replies that no organic disease was cured, such as affections of the eyes and ears, but one woman received benefit. This patient appeared to be on the point of losing her mind from melancholic tendencies. She was extremely nervous, morose and could not sleep, but after being treated by the Healer she recovered entirely, slept well and became quite rational. He admits that Schlatter did for her what he could not do, and adds: "The majority of humanity wants something or some one to lean upon. Schlatter's strong mind furnished that something and many were greatly benefited in mind. He did good, and I am glad he came." One of the letters was from Dr. Charles N. Hart, president of the State Medical Society. He says he knows of several cures for which he is willing to give Schlatter credit. One was that of an aged woman who could not sleep and could get no relief from her physician. After she saw Schlatter she slept well and has slept well ever since. All the cases of cure Dr. Hart knows of were cases of nervousness, and it is his opinion that Schlatter helped about 1 per cent. of all those that came to him. That would be, as he estimates it, fifteen to twenty daily. In Dr. Hart's opinion he did no harm, but considerable good in helping a class of cases which the average physician can not help; and he does not doubt that an explanation can be found on natural grounds for all the cures of which Schlatter was the agent.

Weight to be Given Expert Testimony.—The trial judge instructed the jury in the case of People vs. Seaman, that: "Some expert testimony has been given in this case, but its value depends upon the circumstances, and of these circumstances the jury must be the judge. The jury must determine the weight to be credited to it, but in all cases the testimony of experts is

to be received and weighed with great caution. The evidence of a witness who is brought upon the stand to support a theory by his opinion is testimony exposed to a reasonable degree of suspicion, which there is great reason to believe is in many instances the result of employment and his bias arising out of it. In many cases, it is to be feared, by giving too much weight to testimony of experts, juries have been induced to render unwarrantable verdicts, discreditable to the administration of justice, as well as exceedingly detrimental to public interests." This instruction, the supreme court of Michigan holds, Dec. 10, 1895, was clearly erroneous. An expert witness, it says, is to be judged from the same standpoint as any other witness. It was for the jury, and not for the court, to determine the weight to be given to the testimony. Expert testimony is not always the most reliable, but it is often indispensable. Its infirmity arises largely from its character. Comparatively, it has been held to have little value. It does not follow, because experts differ, that the testimony should be said to be suspicious. Lay witnesses differ materially in their testimony as to conversations and occurrences. Judges, lawyers and juries differ in their conclusions from a given state of facts. It can not be assumed as a matter of law that this testimony is open to suspicion for the reason that experts are employed, and are necessarily biased by such employment. In this case, for example, the evidence as to cause of death was circumstantial. And it must be conceded, continues the court, that the experts who held an autopsy for the very purpose of determining the cause were better qualified to determine what symptoms usually precede a miscarriage, and what are the ordinary causes which produce it, and what the condition of the body indicated upon examination made, than is the ordinary layman. The other circumstances of the case bearing upon the death cause and the defendant's guilt were for the jury, and it was their province to determine those questions from all the facts and circumstances, and to disregard the opinion evidence as to the cause of death, if, in their judgment, the other testimony warranted that conclusion.

Minnesota Changes in Regulation of Practice of Medicine. The Minnesota legislature in 1895 amended the law of that State relating to the practice of medicine and the licensing of physicians and surgeons in several important respects. First, it provided that three, instead of two, of the nine members of the State Board of Medical Examiners shall be "homeopathic" physicians. Then it changed the time for the summer meeting of the board for holding examinations from the first Tuesday in July to June. In the third place, it declared that it shall be unlawful for any person to practice medicine in that State without a license from said board, or without having filed with the secretary of said board an affidavit setting forth the times and places in which he or she has practiced medicine within the State prior to the passage of this law (the act 1887, here amended). Any person in continuous practice in the State since June 1, 1887, not licensed under the provisions of chapter 125 of general laws of 1883, may become a licensed practitioner by submitting to the board of medical examiners a diploma from a recognized college of medicine, or by undergoing an individual examination at a regular examination prescribed by the act now in force. The fee for such license shall be $10. The previous requirement that candidates for examination present evidence of having attended three courses of lectures of at least six months each, is changed to "three full courses of lectures at a medical college, recognized by the State Board of Medical Examiners, of at least twenty-six weeks each: no two courses being within the same year." After January 1, 1899, it shall be necessary for all persons commencing the practice of medicine and surgery to submit to an examination and present evidence of having attended four full courses of lectures at a medical college, recognized by the State Board of Medical Examiners, of at least twenty-six weeks each: no two courses being in the same year. All examination papers on subjects requiring treatment peculiar to any school of medicine shall be examined and their sufficiency passed upon by the members of said board belonging to such school, if such there be, and their recommendation as to the proficiency of such candidate in those particular subjects shall be deemed final by said board.

The Leidy Memorial Fellowship in Anatomy.—The following circular has been issued:

It has seemed unjust to many that there is no suitable memorial to perpetuate the name of Joseph Leidy, the great scientist and teacher. A committee has therefore been organized from among his old students to raise whatever money may be made for the accomplishment of this object.

There is no idea more suitable, no testimonial more practical, none which would appeal more to the judgment of the great investigator himself, than the establishment of a Fellowship in Anatomy, the great division of medicine which he loved so well. As the University of Pennsylvania was the scene of the greater part of his labors, the committee has thought it best to establish the Fellowship in that Institution.

The creation of the Fellowship will not only perpetuate the name of Leidy, but will enable some practical working Anatomist to carry on original work in the University, and to utilize the vast collection of material which is deposited in the Wistar Museum.

Thirty thousand dollars will put such a Fellowship on a permanent working basis, it being intended that the income from this sum should be paid to the Fellow, thus enabling him to pursue his studies with the assurance that his daily wants will be provided for. We appeal to you, therefore, as lovers and admirers of the gentle, humane scientist whose achievements have made his name familiar on two continents, to aid us by subscribing to this Fund.

The movement is a general one, and if you desire further information in regard to the purposes of this memorial, and the regulations which will govern it, we will be glad to communicate with you.

Communications and remittances should be addressed to the secretary and treasurer.

Committee: Dr. Wm. Campbell Posey, Chairman, Dr. Joseph Leidy, Dr. Joseph P. Tunis, Dr. Charles H. Frazier, Dr. J. Howe Adams, Secretary and Treasurer, 1523 Locust Street.

Advisory Committee: Dr. S. Wier Mitchell, Dr. J. M. DaCosta, Dr. John Ashhurst, Jr., Dr. George A. Piersol, Gen. Isaac J. Wistar, Mr. C. C. Harrison, Provost of the U. of Pa.

Philadelphia, Dec. 26, 1895.

Practical Notes.

Hidrosis—At a recent meeting of the Berlin Dermatological Association formalin was recommended in the treatment of hidrosis, in a 0.10 to 0.20 per cent. solution; as also a mixture of formalin and tannin which has proved very successful in severe cases of hidrosis and bromhidrosis.

Lip Reading for Deaf Mutes by Aid of Photographs.—Deaf mutes are taught to understand spoken language by watching the movements of the lips and facial muscles. Dr. Gutzmann has recently secured a series of photographs showing these movements and mounted them in a gyroscope, when the words spoken were immediately recognized by the mutes. The *Deutsche med. Woch.* devotes considerable space to Gutzmann's success, which is sure to prove of the greatest assistance in teaching the deaf to understand spoken works.

Typhoid Bacilli not Transmitted from Mother to Fetus.—A case was described at a recent meeting of the Medical Association at Pavia, Italy, where a woman suffering from a severe case of typhoid fever was delivered of a five-months fetus, which was absolutely free from typhoid bacilli as deter-

mined by the most exhaustive tests. The transmission of disease from mother to fetus is not therefore inevitable, and may depend on special contingencies, such as placental hemorrhage. —*Gaz. degli Osp. e delle Clin.*

Stenosis of Pylorus.—The *Gaz. degli Osp. e Clin.* reports an operation of gastro-enterostomy for severe cicatricial stenosis of the pylorus at Vetralla, last March. The case required a large opening. Catgut and silk were both used. In fifteen days after operation, patient (a laboring man, age 45) was eating the richest diet the hospital afforded without inconvenience, and when he left, sixty days after operation, he was entirely restored to his normal health and had gained many pounds in weight. He resumed his ordinary work and has remained since in robust health. De Mattoli was the surgeon in charge of the case.

Sterilization of Catgut.—The old problem of sterilizing catgut came up again at a recent meeting of the Berlin Medical Association and the importance of sterilizing it insisted upon, as it is in the highest degree infective. Boiling water and sublimate are of course out of the question; but De Saul announced that he had succeeded in thoroughly disinfecting the catgut with boiling alcohol (ethyl alcohol), without injury to it. Carbolic acid mixed with it did not assist the sterilizing process until water was added, when the sterilizing strength was very much enhanced. Dr. Saul showed a small contrivance by which the process was most simply and effectively done. He announces the exact formula as 85 parts alcohol, 5 parts carbolic acid and 10 parts water. In the discussion that followed the objection was made that ethyl alcohol will not mix with water. —*Deutsch. med. Woch.*

Society Notes.

The Clinton County (Iowa) Medical Society, January 7, appointed the following delegates to attend the Atlanta meeting of the American Medical Association: Drs. D. Langan, P. J. Farnsworth, H. F. Farnsworth and G. Hofstetter.

The Medical Council, of Syracuse N. Y., had its regular monthly meeting January 7. Dr. Alfred Mercer, the retiring president, read an able paper on "The Decline of Blood Letting and its Use in Pneumonia." After the reading a general discussion on the subject was participated in by Drs. Henry D. Didama, A. J. Dallas, E. R. Maxson, E. Vandewarker, J. L. Heffron and others. The subject proved to be an interesting one and the practice of bleeding was approved by most of the speakers in dealing with many cases of pneumonia under certain conditions.

Hospital Notes.

A Hospital Under Lay Regime; Thirty Years' Work goes for Nought.—At the Manhattan Hospital and Dispensary, New York City, thirty members of the Board of Directors have resigned because of the withdrawal from the institution of Dr. Rodenstein, its founder, and the Chief of its Medical Board. The trouble is said to be the result of an attempt by the matron to obtain and keep the upper hand. According to the *New York Herald*, Dr. Rodenstein, at a recent meeting of the Board of Managers, was deprived of the honorary title he had held for thirty years of Chief of the Medical Board. "It was decided that a member of the Medical Board was not eligible for membership in the Board of Managers, which was another rap at the doctor. This so incensed Dr. Rodenstein that he forwarded his resignation to the Board. Thirty of the members of the Board of Managers and Ladies' Association, on learning of the doctor's resignation, tendered theirs also. The hospital was started thirty-four years ago as a dispensary by Dr. Rodenstein, who has contributed $12,000 to its support and presented it with the lots on which the hospital stands. J. Hood Wright helped build a large building. The name of the hospital was changed last October to the J. Hood Wright Memorial Hospital, at the request of Mrs. Wright, who pays $6,000 a year of the $25,000 that it takes to support the institution."

The Directors of the New Britain General Hospital have purchased a site for that institution at a cost of $20,000.

—Theodore Sargent, M.D., of Garrett, Ind., has been appointed surgeon of the La Fayette, Ind., Soldier's Home.

Detroit Notes.

The Detroit Medical and Library Association at its regular meeting Monday, January 13, was entertained by Dr. W. R. Chittick who read a paper entitled, "The Effects of Heart Strain on the Tricuspid Valves."

At the regular meeting of the Wayne County Medical Society held January 16, Dr. Arthur Bennett read a paper on "Permanent Permeability of the Foramen Ovale," and exhibited a patient.

Health Office Report for week ending Jan. 18, 1896. Deaths, under five years 41, total, 91. Births, male 42, female 51, total 93. Contagious diseases: Diphtheria, last report 28, new cases 17, recovered 16, died 2, now sick 27. Scarlet fever, last report 18, new cases 9, recovered 8, died none, now sick 19. Smallpox, last report 2, new cases 2, recovered 1, died none, now sick 3. Measles, last report 1, new cases none, recovered 1, died none, now sick none.

The Board of Trustees of Harper Hospital at their annual meeting appointed the following Medical Board for 1896: J. H. Carstens, Chief of Staff. Consulting surgeons: Theo. A. McGraw, Donald Maclean. Attending surgeons: Daniel LaFerte, H. O. Walker, J. K. Gailey, E. T. Tappey. Consulting physicians: C. A. Devendorf, Chas. Douglass. Attending physicians: Geo. Duffield, J. J. Mulheron, W. R. Chittick, D. S. Campbell. Consulting oculists: L. Connor, Geo. E. Frothingham. Attending oculists: Geo. E. Frothingham, Jr., Don. M. Campbell. Consulting neurologist: David Inglis. Attending neurologists: J. E. Emerson, C. W. Hitchcock. Dermatologist: A. E. Carrier. Laryngologist: E. L. Shurly. Gynecologists: H. W. Longyear, J. H. Carstens, W. P. Manton, Helen F. Warner. Microscopist: E. H. Sargent. Consulting pathologist: Henneage Gibbs. Assistant surgeons: W. G. Henry, F. B. Tibbals. Pathologist and curator: P. M. Hickey. Junior surgeon: Angus McLean. House physicians: C. W. Barrett, B. R. Shurly, A. D. McLean, Henry H. Kuhn. Polyclinic staff: Director—H.R. Varney; General medicine—Hedley Williamson, E. G. Knill; Surgical diseases—L. E. Schell, R. T. Farrand; Nose and throat—W. S. Anderson, H. A. McEachren; Eye and ear—G. L. Renaud, George Suttie; Diseases of women—Emma D. Cook, Anna J. Clapperton, John N. Bell; Nervous diseases—W. J. Senkler; Skin diseases—H.R. Varney.

Louisville Notes.

Eruptive Hospital.—In accordance with a resolution passed at a recent meeting of the general council, the resignation of the Roman Catholic Sisters in charge of the Eruptive Hospital has been requested and received. The Sisters have been in charge of the hospital for five years. The Board of Public Safety has appointed Dr. C. T. Pope as superintendent, with a salary of $75 a month. The superintendent is empowered to hire competent nurses when any cases of contagious disease are admitted.

City Physician.—Dr. Hugh McCullough, the late coroner of Jefferson County, has just been appointed by the Board of Public Safety as City Physician to the eastern district, vice Dr. Forst resigned. The position pays about $75 a month.

Central Kentucky Medical Society.—This Society held its annual meeting in Danville, Ky., on January 15 and 16. The following officers were elected: President, Dr. James B. Kinnaird, of Lancaster; Vice-president, Dr. G. E. Davis, of Salvisa; Treasurer, Dr. W. D. Powell, of Harrodsburg; Secretary, Dr. Steele Bailey, of Stanford. The next meeting will be held in Stanford the first week in April. Dr. T. C. Evans, of Louisville, was in attendance and read a paper on "Cancer of the Tonsils."

Gwynn.—"Doctor" Gwynn has been arrested in Bardstown, Ky., upon the instigation of Drs. Hill and Blincoe, for practicing without a license or diploma. He has been arrested before on the same charge, and was practicing under the name of Guyann. He was committed to jail in default of bail of $100.

Dr. Ramsey.—Dr. M. C. Ramsey, formerly of this city, died

at his home in Lexington, Ky. He was born near Madison, Ind. seventy-two years ago. In early life he was a practicing physician, but deciding to adopt a commercial career, he came to this city in 1853, and was for twenty-six years one of the leading jewelers. Later he moved to Lexington, Ky., where he resided until his death. His remains were brought here for burial.

DR. JESSEE.—Dr. John Jessee has been elected Professor of Physiology in the Central Normal College at Waddy, Ky. The appointment is a well-merited one.

DEATH REPORT.—The condensed statement of mortality prepared by Health Officer White, for the past week, shows a total of 50 deaths, being 10 less than the previous week. Pneumonia caused 8 deaths.

CONTAGIOUS DISEASES.—The ordinance looking to the prevention of contagious diseases having been passed by the general council and approved by the late mayor, Henry S. Tyler, is now in effect, but as yet all physicians of the city are not cognizant of it. The law requires that the notice should be sent to the health officer, over the signature of the physician attending. The health officer complains that physicians notify him over the telephone which is contrary to the law.

BARBOUR—Dr. John Ford Barbour died at his residence in this city on January 16, of acute pneumonia, after an illness of four days.

Cincinnati Notes.

THE MORTALITY report for the past week gives: Croup 2, diphtheria 5, measles 7, typhoid fever 4, other zymotic diseases 8, cancer 2, phthisis 9, other constitutional diseases 2, apoplexy 2, Bright's disease 2, bronchitis 6, convulsions 3, meningitis 7, peritonitis 2, pneumonia 17, other local diseases 28, violence 4, under 1 year 15; all causes 117; annual rate per 1,000 18.10. Corresponding week 1894, 125; 1893, 134.

FOUR CASES of measles in adults presented themselves at the Cincinnati Hospital last week.

THE PRESBYTERIAN HOSPITAL for Women and Children has had a donation of $20,000, from Mrs. Alexander McDonald to wipe out the existing debt.

DR. LINCOLN MUSSEY was married on the 7th to Miss Judith Culvert of Cincinnati.

FRANK AUZERNE has been appointed steward of the First Regiment O. N. G., to succeed Dr. Otto Reum, who has located in Los Angeles, Cal., on account of poor health. Mr. Auzerne has served two enlistments in the U. S. Army as Hospital Steward.

DR. JOHN C. OLIVER has been appointed a member of the Board of Examining Surgeons of the police department vice Dr. N. P. Dandridge resigned.

JAMES SHERLOCK has been appointed superintendent of the Branch Hospital or "Pest House."

DR. MARSHALL H. KEY has located in the Nean building, and also announces the opening of the Highland Sanitarium.

DR. FERD. H. HUELSMANN met with a serious accident last week by falling through an open trap door leading to a drug store cellar. He sustained a broken nose, several severe bruises of the head and internal injuries.

THE REPORT of the Cincinnati Hospital shows that the recent smallpox epidemic necessitated the expense of $449.49 in improvements and $3,938.37 for the care of patients, cleansing and disinfecting the buildings of the Branch Hospital. There were 143 cases cared for. The expenses of the hospital for the year were $109,359.96.

THE APPROPRIATIONS of the State for the past year were as follows: Board of Health, $8,000. Dairy and Food Commission $25,100. State Hospitals: Athens, $142,585.78, Cleveland $157,350, Columbus $181,400, Dayton $128,200, Longview 135,000, Massillon $50,000, Toledo $174,650, Epileptic hospital at Gallipolis $138,100.

A CURIOUS CASE was discovered at the morgue last week by the coroner, who being called there to investigate a case of an infant which had died under somewhat peculiar circumstances within twenty-four hours after birth, found that the upper jaw contained a completely developed set of teeth.

THE STATE BOARD of Health are endeavoring to obtain a better system of vital statistics, and their annual report says: "No one knows the number of deaths or the number of births that occurred in Ohio during the past or any other year. Thousands die and thousands are born of whom no official record is made or can be obtained. Crime is made easy, the settlement of estates and legacies difficult, and a study of the causes of death and means for their removal impossible from the lack of such records."

Regarding smallpox it says: During the year there appeared, at Cincinnati, 143 cases; Cleveland, 17 cases; Bridgeport, 16 cases. It was also present at Toledo, Columbus, Mansfield, Lima, Martin's Ferry, Peace Township, Belmont County; Gallipolis Township, Gallia County; Deerfield, Wellington, Addyston, Westwood, Williamsport and Ridley."

SALEM, OHIO, has just had a smallpox scare.

THE CASES of smallpox at Martin's Ferry are all doing well and the quarantine has been raised.

DR. J. A. CULVER, the gold-medal graduate of the Ohio Medical College class of 1874 died December 20, from the excessive of morphin.

AT THE MEETING of the Academy of Medicine January 6, Dr. Julia W. Carpenter read a paper on the open-air treatment of pulmonary consumption. The amendments to the constitution were also brought up for final reading and were passed. The principle change being that, in the future, amendments to the constitution can be voted upon after the proposed change has been read three times with an interval between of not longer than two weeks instead of the requisite three months between the first reading and the voting as heretofore.

St. Louis Notes.

WEEKLY REPORT OF HEALTH OFFICE.—Total number of deaths for the week ending January 18, 187, compared with 189 for the preceding week, and 158 for the corresponding period of 1895. Births reported, 208.

CONTAGIOUS DISEASES.—Reported during the week ending January 18, diphtheria, 58 cases, 13 deaths; croup, 8 cases, 4 deaths; typhoid fever, 6 cases, 2 deaths; measles, 36 cases, 1 death; whooping cough, 3 cases, 1 death; scarlatina, 9 cases.

ST. LOUIS MEDICAL SOCIETY.—At the regular meeting January 18, the announced scientific program consisted of a paper on "Infiltration Anesthesia" by Dr. Bransford Lewis.

BURT G. WILDER, of Cornell University, gave a lecture Wednesday evening, January 15, at the St. Louis Medical College on the occipito-parietal fissure; on Thursday he addressed the students of the Marion-Sims College of Medicine on the utility of dissection of the lower animals as an introduction to the study of human anatomy.

THE STATE BOARD OF PHARMACY held its examination on January 13 and 14. Ninety-one candidates presented themselves and thirty-seven passed.

THE STATE BOARD OF HEALTH and the medical colleges have furnished the most fruitful source of medical gossip during the week. At the meeting of the Board on the 6th inst., the matriculates of all the medical schools of the State were passed upon and measured by the rule of the Board requiring an increased standard of preliminary education. The reports that have since become current have caused in some instances freely expressed indignation, and charges of jealousy and favoritism have been openly reported. In all instances where students were found deficient under the sworn statement of the faculty the students, as well as the faculty, were notified that they had failed to come up to the requirements of the Board, but that they could present reasons to the Board why their names should be continued on the college list. The following gives a

list, approximately correct, of all the matriculates submitted to the Board, with number of those rejected:

Colleges.	Matriculates.	Notifications.
Barnes Medical College	139	101
Marion Sims College of Medicine	273	7
Ensworth Medical College	23	2
American Medical College, Eclectic	47	0
Medical Department State University	48	0
Missouri Medical College	98	13
Central Medical College	19	1
St. Louis Medical College	30	7
Kansas City Medical College	45	13
Homeopathic Medical College	8	0
St. Louis College Physicians and Surgeons	86	13
Beaumont Hospital Medical College	38	5
Woman's Medical College and Hospital Association	1	0
Total	855	162

These figures do not show the entire attendance, but they give an approximate idea of the relative attendance at the various schools. The most disturbing factor in the matter is the necessity of the Board to reject certain matriculates found in some schools that had been already rejected at other schools for lack of qualification. The Board is worthy of all support in its effort to elevate the standard of students, and it is to be hoped that no combination of influence will prove effectual in apposing it in its good work. Such a step as this will go far to overcome the prejudice that has been fostered against St. Louis as a center of medical teaching.

Philadelphia Notes.

THE TWENTY-SIXTH ANNUAL MEETING of the Jefferson Medical College Alumni Association was held on the 18th inst., Dr. E. E. Montgomery, President, in the chair. He congratulated the members upon the fact that through their efforts "the college had been reorganized, the faculty salaried, the institution made partaker in the profits of its success and relieved from the stigma of being a coöperative institution for the benefit alone of its faculty." Since the last meeting of the Alumni Association the chair of ophthalmology had been established in just recognition of the long and arduous services of Professor Thomson in the clinical work. The chair of pathology has been established with a salary equal to that received by any other professor in the school. This chair has been filled by the trustees by the election of Dr. George Dock, now Professor of Practice of Medicine in the University of Michigan. "After careful consideration the board of trustees and the faculty have decided that it would be unwise to remove from the central portion of the city, and consequently the large six-story building to the south of the college has been procured for additional laboratory and clinical purposes. The determination to remain at the present location and the increased needs to meet the requirements of a four years' graded course, demand increased expenditure. Both college and hospital buildings should be remodeled in order to meet modern requirements." The establishment of the new chair of pathology affords the Alumni Association an opportunity to demonstrate its ability to be of service to the institution. "To properly equip this department will require the expenditure of at least $10,000. The production of this sum of money the Alumni Association should accept as their work."

After the conclusion of the address, a motion was adopted pledging the association to raise $10,000 for the pathologic laboratory, and a committee was appointed consisting of twenty-five members to solicit subscriptions. The first subscription was made from the treasury of the association, $100 being appropriated on motion of the treasurer, Dr. E. L. Vansant. The executive committee are authorized to prepare a medal to be awarded as the alumni prize for scholarship at the final examination, on commencement day. The officers for the ensuing year are as follows:

President: Dr. A. K. Minich, of Philadelphia.

Vice-Presidents: Drs. A. P. Brubaker, J. M. Barton, Orville Horwitz, G. A. Horn, of Philadelphia; W. D. Foster, Pittsburg; H. H. Drake, Norristown; H. G. McCormick, Williamsport; W. H. Hartzell, Allentown; J. K. Lineaweaver, Columbia; W. B. Lowman, Johnstown; Thomas Addis Emmett, New York; P. S. Conner, Cincinnati, Ohio; R. Beverly Cole, San Francisco, Cal.; Daniel Shock, Camden, N. J.; Jos. H. Chandler, Centreville, Del.; Thos. B. Camden, Parkersburg, W. Va.; Jas. P. Duckett, Anderson C. H., N. C.; Frank S. Love, San Antonio, Texas; Geo. C. Barton, Minneapolis, Minn.; J. T. Eskridge, Denver, Colo.; George C. Savage, Nashville, Tenn.

Chairman of Executive Committee: Dr. Hobart A. Hare.

Corresponding Secretary: Dr. R. J. Dunglison.

Recording Secretary: Dr. Frank Woodbury.

Treasurer: Dr. E. L. Vansant.

PERSONAL.—The friends of Prof. Horatio C. Wood will regret to hear of a serious accident which occurred on the 16th inst., while he was riding his bicycle on his way to his afternoon lecture at the University of Pennsylvania. In turning out from the track to avoid a car, he fell heavily and was run over by a carriage. It was found that he had received a scalp wound and contusions of the body, but apparently no bones were broken. He soon regained consciousness and was taken home. It is hoped that he will be out again in a few days.

ETHER ADMINISTRATION.—In order to avoid irritation of the nasal passages during ether inhalation (for which Dr. Gerster, of New York, has suggested the preliminary application of cocain to the mucous membrane of the nose), Dr. Thomas G. Morton has adopted the original method of occluding the nostrils with cotton, thus obliging patients to inhale through the mouth. This method has been in use for a couple of weeks at the Pennsylvania Hospital and has been found to work well. It has the advantage that if it becomes necessary to promptly resuscitate a patient, the plugs can be taken from the nose and free ingress of air permitted. The comparative absence of struggling on the part of the patient is quite noticeable, and the anesthesia is accomplished with a minimum of ether. The combined method of administration of oxygen with ether was abandoned after considerable experience as being slow in causing anesthesia and wasteful of the anesthetic.

ACADEMY OF SURGERY.—At the January meeting of the Academy of Surgery the oration was delivered by Dr. J. M. Barton, who devoted his time principally to the consideration of some medico-legal relations of fractures. The subject proved so interesting that it was decided to devote the February meeting to a general discussion of it.

IMPURE AND ADULTERATED FOODS.—The report of the Department of Agriculture for the last nine months, which has just been completed, contains the results of the work of Secretary Edge in the analysis of food-stuffs. Some of the discoveries of the department are of general interest. Salicylic acid is largely used in the preparation of jams, jellies, catsup, etc. This has been forbidden by the French government to be used for such purpose, as it is considered to be dangerous to the public health. Table mustard is practically never pure; of powdered mustard, two-thirds of the samples were found to be adulterated. Ground spices are seldom pure. Many fruit jams, strawberry, raspberry, etc., consist principally of starch paste, flavored with a small amount of fruit. French peas contain an injurious amount of metallic salts. An aggressive campaign has been conducted against imitation butter, but the recent conviction of vendors of oleomargarine proves that it is still in the market, and the same is to be said of cider vinegar. The work of the department in enforcing the pure food laws has been followed by excellent results and proves its establishment to be in the interest of true economy, since the annual loss in adulteration in the State of Pennsylvania is not less than $20,000,000 at a conservative estimate.

Washington Notes.

WEEKLY REPORT OF THE HEALTH DEPARTMENT.—The report of the Health Officer for the week ended January 11 is as follows: Number of deaths (stillbirths not included): White, 86; colored, 60; total, 146. Death rate per 1,000 per annum; White, 23.8; colored, 34.7; total, 27.6. Death rate per annum corresponding week last year, 21.3. The death rate for the District of Columbia took a sudden upward turn last week. There were 27 fatal cases of pneumonia and 22 died of consumption. Four deaths from typhoid fever were reported, and

2 from grippe. Infant mortality ran up to 37 of those under five years old, of which 26 were under one year of age. The hospitals reported 23 deaths during the week, and the coroner certified to 14 deaths. The births reported were 112, and 39 certificates of marriage were received by the Health Department.

HEARING ON MEDICAL BILLS.—There was a hearing before the Senate committee on the District of Columbia at 2 o'clock on Monday afternoon on medical bills relating to the District of Columbia. There are four of these bills before the committee, two by Mr. Harris, to regulate the practice of medicine and surgery, to license physicians and surgeons and to punish persons violating the provisions thereof in the District of Columbia, and to provide for the incorporation and regulation of medical colleges in the District, and a third bill by Mr. Morrill relating to the testimony of physicians in the courts here. The hearing had special reference to Mr. Harris's bill to regulate the practice of medicine and surgery in the District.

TO PROVIDE FOR INEBRIATES.—Mr. Roach has introduced in the Senate a bill to provide for the care of inebriates in the District of Columbia. It is similar to a measure introduced in the House of Representatives by Mr. Meredith on December 9.

TO PREVENT CRUELTY TO ANIMALS.—A bill for the prevention of cruelty to animals in the District of Columbia has been introduced in the Senate by Mr. McMillan. It provides that no person shall perform any experiments on a living animal calculated to give pain to such animal, except subject to certain restrictions. Experiments by licensed medical practitioners may be performed, but the animals experimented on are to be placed under the influence of anesthetics until before they are revived. A first offence in the violation of this law renders the offender liable to a fine of $150, and a second offense to a fine of $300 or six months' imprisonment.

WANT MONEY FOR HOSPITALS.—The representatives from the Hospital Boards of the Eastern Dispensary, Home for Incurables and the Central Dispensary and Emergency Hospital were given a hearing by the Sub-committee on Appropriations on the 18th inst. The claims of each were listened to with great interest and it is hoped that the institutions will receive what they asked for. They are all doing good and necessary work, and without doubt head the list of properly conducted medical institutions.

THE POST-GRADUATE MEDICAL SCHOOL.—The Board of Trustees of the Post-Graduate School of Medicine held a special meeting on the 13th inst., to receive an important recommendation from the curriculum committee.

WASHINGTON MICROSCOPICAL SOCIETY.—At the meeting of the Microscopical Society held on the 14th inst., Dr. V. A. Moore read a very interesting paper entitled "Morphology of Bacteria," and accompanied the paper with lantern slides.

MEDICAL SOCIETY.—At the meeting of the Medical Society held on the 15th inst., Dr. Wm B. French read a paper entitled "The Malarial Organism with report of Cases." Dr. Gray exhibited by lantern slide some photo-micrographs. The paper was discussed by Drs. Walter Reed, Kinyoun and others. This paper is second to none read before the Society and showed the practical work done by Dr. French at the laboratory and clinic at the Central Dispensary and Emergency Hospital. One of the cases was one of coma from acute malarial poisoning and it is believed to be the first case ever reported of the kind. Dr. J. F. Thompson presented the specimen of an extra-uterine pregnancy at term, which he successfully removed from a woman about fifty years of age. The pregnancy was supposed to have taken place four years ago. The fetus and placenta were almost absorbed. Dr. Robt. Fletcher, U. S. A., formerly of the Columbia Medical School, has been elected an honorary member of the Society.

WASHINGTON OBSTETRICAL AND GYNECOLOGICAL SOCIETY.—The 239th meeting of the Society was held on the 17th inst. Almost the entire evening was taken up with the discussion on Dr. Kelley's paper on "Fibroid Uterus and Pregnancy." Dr. Stanley, of the Garfield Hospital was an invited guest at the meeting. Dr. Van Renssalaer presented a disorganized appendix with concretions which he had successfully removed. Dr. T. C. Smith presented a proscribed hollow mass which he removed from the uterus of a woman. It was referred to the microscopic committee for report. Dr. J. T. Johnson presented a uterus which he had removed per vaginam for cancer far advanced. Dr. Fry presented a uterus which had been perforated as a result of abortion. The operation was followed by total suppression of urine for five day. He had reopened the abdomen to be sure the ureters were not included in the ligature. Sepsis was probably the cause of the suppression.

THE PUBLIC SERVICE.

Army Changes. Official list of changes in the stations and duties of officers serving in the Medical Department, U. S. Army, from January 11, 1896, to January 18, 1896.

Major Curtis E. Munn, Surgeon (Benicia Bks., Cal.), is granted leave of absence for two months, to take effect on or about Jan. 21, 1896, with permission to go beyond sea.

First Lieut. James M. Kennedy, Asst. Surgeon, is relieved from duty at Camp Merritt, Mont., to take effect upon the expiration of his present leave of absence, and ordered to Ft. Missoula, Mont., for duty.

Capt. James D. Glennan, Asst. Surgeon, leave of absence granted is extended one month.

Marine-Hospital Changes. Official list of changes of station, and duties of Medical Officers of the U. S. Marine-Hospital Service, for the fifteen days ended January 15, 1896.

Surgeon G. W. Stoner, granted leave of absence for thirty days with pay, and not to exceed sixty days without pay, Jan. 15, 1896.

P. A. Surgeon W. J. Pettus, granted leave of absence for thirty days, Jan. 2, 1896.

P. A. Surgeon G. M. Magruder, leave of absence extended nine days, Jan. 2, 1896.

P. A. Surgeon H. T. Goodwin, granted leave of absence for sixty days, Jan. 4, 1896.

P. A. Surgeon A. C. Smith, directed to investigate relative to smallpox in Mississippi and Crittenden Counties in Arkansas, Jan. 14, 1896.

Asst. Surgeon C. H. Gardner, ordered to examination for promotion, Jan 4, 1896. Granted leave of absence for thirty days, Jan. 15, 1896.

Asst. Surgeon J. A. Nydegger, ordered to examination for promotion, Jan. 8, 1896.

Asst. Surgeon H. W. Wickes, to proceed from New Orleans, La., to Memphis, Tenn., for temporary duty, Jan. 14, 1896.

RESIGNATION.

P. A. Surgeon H. T. Goodwin, resignation accepted, to take effect March 9, 1896.

Change of Address.

Akins, W. T., from 3433 Wabash Avenue to 180 Wilmot Avenue, Chicago, Ill.

Kerrigan, J. K., from 687 West Twenty-first Street to 1367 West North Avenue, Chicago, Ill.

Lilienerantz, A., from 819 Market Street, to 803 Sutter Street (corner Jones Street), San Francisco, Cal.

Von Rehm, E., from Chicago, Ill., to 59 West One Hundredth and Fifth Street, New York, N. Y.

LETTERS RECEIVED.

Armour & Co., Chicago, Ill.; Atchison, C. R., Nashville, Tenn. (2); Adams, J. Howe, Philadelphia, Pa.; Allen, William L., Davenport, Iowa.

Brinton, J. H., Philadelphia, Pa.; Blake, C. E. & Co., Chicago, Ill.; Battle & Co., Etc.; Bailey, Steele, Stanford, Ky.; Blech, Gustavus, Detroit, Mich.; Bartholow, Paul, Philadelphia, Pa.; Barker, D. H., Reedy Ripple, W. Va.

Clarke, The Robert Co., Cincinnati, Ohio; Castle, Wilmot & Co., Rochester, N. Y.; Cantwell, John, New York, N. Y.; Cochran, Jerome, Montgomery, Ala.; Christison, J. Sanderson, Chicago, Ill.

Douglas, Richard, Nashville, Tenn.; Ducharme, George A., Detroit, Mich.

Engelmann, Rosa, Chicago, Ill.

Finley, G. W., Harmony, Ind.; Fest, T. T. B. Plank Road, Mich.; Fowler, W. S., Chicago, Ill.

Gihon, Albert L., New York, N. Y.; Garnett, A. S., Hot Springs, Ark.; Guild, William H. & Co., Boston, Mass.; Gardner, Thomas, Minneapolis, Minn.

Holmes, W. D., Belleville, N. J.; Hummel, A. L., Advertising Agency, New York, N. Y. (3); Hallopeter, J. S., Houston, Ohio; Horlick's Food Co., Racine, Wis.; Harvey, The G. F. Co., Saratoga Springs, N. Y.

Kelly, Howard A., Baltimore, Md.

Lemcke & Buechner, New York, N. Y.; Lee, J. Elwood Co., Conshohocken, Pa.; Lyford, W. H., Port Byron, Ill.

McFall, D. M., Mattoon, Ill.; McSwain, J. A., Paris, Tenn.; Morse, F. P., New York, N. Y.; Marchand, Charles, New York, N. Y.; Maltine Mnfg. Co., New York, N. Y.; Morse, Lyman D., Advertising Agency, New York, N. Y.

Noble, Charles P., Philadelphia, Pa.; Nicoll, D. T., Kilbourn City, Wis.; Neyman, E. H., Milwaukee, Wis.

O'Gorman, J., Baltimore, Md.

Parsons, H. J., Mansfield, La.; Pollock, R. M., Princeton, Ill. (2).

Rosenthal, J. M., Ft. Wayne, Ind.; Reynolds, F. R., Eau Claire, Wis.; Rickensfeldt & Co., St. Louis, Mo.; Raeder, J. W., Wilkes Barre, Pa.; Robinson, J. R., Colorado Springs, Colo. (2); Robeson, T. J., Chicago, Ill.

Skinner, D. M., Belleville, N. J.; Strueh, Carl, Chicago, Ill.; Spalding, Warren C., New York, N. Y.; Seibert, W. H., Steelton, Pa.; Subscription News Co., Chicago, Ill.; Seaman, Gilbert E., Milwaukee, Wis.

Throwbridge, J. B., Hayward, Wis.; Thorner, Max, Cincinnati, Ohio; Taylor, H. L., St. Paul, Minn.

Von Rehm, E., New York, N. Y.

Ward Brothers, Jacksonville, Ill.; Weber, A. H., Des Moines, Iowa; Whitford, William, Chicago, Ill.; Woman's Medical College, New York, N. Y.; Whelpley, H. M., St. Louis, Mo.; Weidman, W. Murray, Reading, Pa.

Yolton, J. L., Bloomington, Ill.